



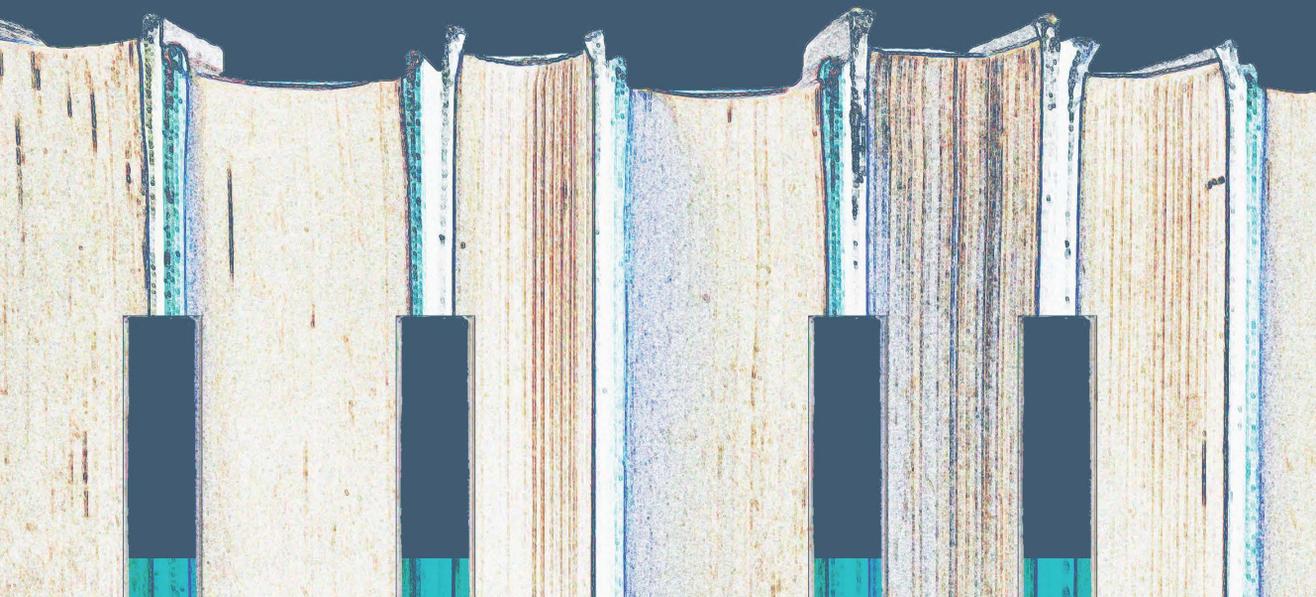
**INTERNATIONAL SOCIETY
FOR MUSIC EDUCATION**

**INTERNATIONAL CONTRIBUTIONS TO
DIVERSITY IN MUSIC EDUCATION
RESEARCH**

**Proceedings of the 28th International
Seminar of the ISME Research Commission**

Virtual seminar hosted by
University of Jyväskylä, Finland
27-31 July 2020

Edited by
Patricia A. González-Moreno



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Vision and Mission of the ISME Research Commission

The Research Commission was the first commission formed within the International Society for Music Education. Its first meeting took place in Reading, England in 1968. The Research Commission seminars bring together a broad range of participants from the various branches of music including music psychology, performance, theory, composition, sociology and musicology. A common interest in the pursuit of inquiry and scholarship contributes to a learning environment for early career and experienced researchers alike that is characterized by hard work, strong scholarship and collegiality.

Vision

The Research Commission holds as a central value that the theory and practice of music education be underpinned by a strong research evidential base. The Research Commission promotes the development of an inquiry-based approach to the theory and practice of music education that draws on a range of research methods and techniques.

Mission

The mission of the ISME Research Commission is to:

- Examine through research important issues facing music education worldwide
- Develop, refine and demonstrate a range of research approaches, methods and techniques for critically examining issues in music education
- Provide a forum for the communication, critical analysis and dissemination of research innovations in music education
- Deepen and develop the research knowledge base for practitioners, policy makers and researchers in music education.

Activity

The Research Commission accomplishes its mission by providing workshops, lectures, seminars and demonstrations in different locations in order to build research capacity and to promote research expertise in all regions of the ISME membership. Commission

seminars, held immediately before each world conference, bringing together early career and experienced researchers from around the world.

ISME Research Commission (2018-2020)

Patricia A. González-Moreno, Co-Chair (2014-2020)
(Mexico) representing Latin America

Rose Anyango Omolo-Ongati, Co-Chair (2014-2020)
(Kenya), representing United Kingdom and Africa

Marcelo Giglio (posth.) (2016-2022)
(Switzerland) representing Europe

Jason Chi Wai Wen (2016-2022)
(Hong Kong) representing Asia

Ruth Brittin (2018-2024)
representing United States of America

Julia Brook (2018-2024)
(Canada) representing Australia, Canada, and New Zealand

Secretary of the Research Commission:

Evelyn K. Orman,
ISME Research Commission Past Chair

Honorary Life Members of the ISME Research Commission

James Carlsen (posth.)
Clifford Madsen

Foreword

Notes of Gratitude from the Host Organization

On behalf of the organizers of the seminar, I wish to express what a great pride and privilege it was to host the ISME Research Commission seminar at the University of Jyväskylä, at the Finnish Music Campus, in Finland, in 2020.

ISME Research Commission seminar is a unique forum for developing music education. It is the global meeting place for researchers from all across the world with varying methodological perspectives, yet with a shared interest in developing music education research. This year we had attendees from 37 countries. The seminar discussions brought insight to local and global perspectives and made us feel inspired of the state of the art of our field.

At the University of Jyväskylä, we conduct music education research in active multidisciplinary dialogue with music therapy, music cognition, music psychology, computer science, neuroscience, and experimental psychology. We thus deeply relate to the aims of ISME Research Commission in endeavoring to advance music education as a multidisciplinary, evidence-based practice and field of research. The seminar was an inspiring forum for us to dialogue with the global network.

Many things were different in 2020, in comparison to the prior Research Commission seminars. The major responsibility of the host institution is to provide a supportive context for the scientific dialogue and networking. This year, this context was fully virtual, with the Covid-19 pandemic shaking us globally, preventing us to meet in person in Jyväskylä.

The new format required novel arrangements, technical responsibilities, and timing issues to work globally, but we had a solid technical support from the University of Jyväskylä IT team and the talks, discussions, and even some social programme worked out fluently. Our warm thanks go to the Research Commission's Co-Chair, Patricia González, on her dedication to overcome all obstacles with us, with amazing professional competence and human compassion.

In the middle of the global crisis, I believe the mere fact that we did arrange the seminar, with all its regular contents of research presentations, break-out sessions, and dynamic dialogue with our colleagues, gave us all great inspiration and reassurance. The pandemic did not stop us from continuing to be a vibrant discipline.

It was an exceptional privilege to host the Research Commission seminar during this exceptional year. With a great gratitude and abundance of good memories from the seminar I present my warmest thanks to the ISME Research Commission and to all of our seminar participants. Together we all made this event a memorable, inspirational, and warm-hearted moment in time.

Keep playing, my friends, it was a huge pleasure to be part of this global band!
On behalf of the Jyväskylä organizing committee, December 18th 2020.

Suvi Saarikallio

Associate Professor of Music Education, University of Jyväskylä

President of Finnish Society of Music Education (FiSME)

Head of the Jyväskylä organizing committee for ISME Research Commission seminar in 2020

Other members of the Jyväskylä organizing committee:

Hannu Ikonen, Head of Finnish Music Campus, Secretary-General of EduFutura Jyväskylä

*Heikki Hanka, Head of Department, Department of Music, Art and Culture Studies,
University of Jyväskylä*

*Markku Pöyhönen, Coordinator, Department of Music, Art and Culture Studies, University of
Jyväskylä*

Taru-Maija Heilala Rasimov, Conference Coordinator, University of Jyväskylä

Johanna Muhonen, Producer of Finnish Music Campus

Tiina Riuttanen, Head of Media and Communication Services of EduFutura

*Mikko Leimu, IT support team, Department of Music, Art and Culture Studies, University of
Jyväskylä*

Preface

Undoubtedly, 2020 has been a year that many of us around the world will never forget. The pandemic caused by COVID-19 imposed challenges at all levels of our personal and professional lives. Under these circumstances, the ISME Research Commission embraced the challenge of organizing its Seminar in a virtual mode, which took place from 27th to 31st July 2020. This was possible thanks to the encouragement and institutional support from ISME President, Susan O'Neill, and ISME Chief Executive, Ian Harvey; the great collaboration with Suvi Saarikallio, Markku Pöyhönen, and Mikko Leimu; the financial support from EduFutura Jyväskylä and the University of Jyväskylä, and its technological facilities; as well as the continuous support from SEMPRES, the Society for Education, Music and Psychology Research.

In order to remain trustful to its mission to promote research expertise and bring together early career and experienced researchers worldwide, the ISME Research Commission provided a space for virtual communication, in which all participants were able to dialogue, reflect, and advance current knowledge in music education research. It was also an opportunity to share our lived experiences in times of lockdown, while we were highly dependent on technology to make music and music education available beyond our family spaces. In order to accomplish this, we decided to organize and conduct the online seminar through synchronous Zoom meetings. Although the format of the Research Seminar has been fully residential since its inception in 1968, it was evident that, because of time zone constraints, it was not possible for everyone to attend all presentations. For this reason, the seminar schedule was organized in two blocks, one to facilitate participation from people in Asia/Oceania/Europe/Africa, and the second one for people in the Americas/Africa/Europe.

This configuration not only allowed us to have the 24 full papers previously selected for presentation, but also to provide a space for other colleagues interested in research methodologies who were not able to present their contributions at the ISME World Conference, as it was cancelled due to the pandemic. It is not our intent to change the historically successful format of the Research Commission Seminar, however, we are proud of this decision given this situation as it allowed us to achieve ISME's aims of inclusion and equity, to enrich everyone's experiences during the Seminar, and to respond effectively to the challenging global circumstances.

This book includes 23 of the 24 full papers initially selected and presented at the Seminar, 24 of the presentations accepted to the ISME World Conference that were organized as roundtable presentations, as well as 8 poster presentations accepted to both the World Conference and Research Commission Seminar. All proposals had already been peer-reviewed and are presented here in alphabetical order by sole or first author's last name, except for the first roundtable presentation that aimed to provide the history and global impact of the ISME Research Commission, as an introduction to the following roundtable presentations.

The contributions show a broad range of methodological approaches and reflect the broad geographical representation of papers, as well as roundtable and poster presentations, with a total of 22 countries from the 5 continents represented during the seminar. Historically, for the Commission, it has been an important value to ensure that both less experienced and accomplished researchers gather together to share and build research expertise around the world; a mission that we hope we accomplished in this virtual seminar.

This seminar was also marked with deep sadness because we lost two important and beloved members of the ISME Research Commission, Professors James Carlsen and Marcelo Giglio, who passed away just before the seminar took place. James Carlsen, Honorary Life Member of the Research Commission, was a pillar in the creation of the commission along with Arnold Bentley and Bengt Franzén, when they organized the first "International Seminar on Experimental Research in Music Research" held in Reading, England in July 1968. We cannot talk about the history of the Research Commission, without acknowledging that the Research Commission is here because of James' vision and commitment to music education research. Marcelo was a current Commissioner (2016-2022), representing Europe. We all remember him for his enthusiasm and charismatic personality. His vision of the world of creativity and its implications in education had a remarkable sense of reality. Throughout his career, he was known for his work on reflective and creative collaborations in the classroom, teacher-student relationships in creative settings, and teacher training transformations during educational changes. Their contributions to the Research Commission in the initial and recent history are remarkable, and we are forever grateful to each of them for their generosity and visions of what should be music education research around the world.

I especially want to thank Suvi Saarikallio and all the JYU team, for the extensive efforts they put into organizing and securing funding to host our seminar in Jyväskylä.

We all missed the opportunity to visit this great city, but they made everyone feel the Finnish spirit and generosity. We also deeply appreciate the efforts and support from Markku Pöyhönen and Mikko Leimu, who worked tirelessly to provide all the required technological assistance before, during, and after the seminar. Everything worked so well because of them.

I personally want to express my profound appreciation to my Co-Chair Rose Omolo-Ongati and fellow Commissioners, Marcelo Giglio – who we deeply missed during the seminar –, Ruth Brittin, Julia Brook, and Jason Chi Wai Chen. We all made the many decisions necessary to plan, organize and run the seminar, and collaborated during all of the various stages. I am also particularly thankful to Evelyn Orman, past Chair and 2018-2020 Secretary, for all her wisdom, invaluable support, and expertise in relation to the RC policies and traditions. Last but not least, I would like to thank Graça Boal-Palheiros and Bo Wah Leung, past Research Commission Co-Chairs, who supported the Seminar by hosting some of the scheduled sessions for the Asia/Oceania/Europe/Africa region. Thanks to all of you so that this seminar could take place.

Patricia A. González-Moreno
Co-Chair of the ISME Research Commission, 2018-2020
November, 2020.

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The ISME Research Commission is deeply grateful to the support and sponsorship received from:

Susan A. O'Neill
ISME President

Ian Harvey
ISME Chief Executive

Suvi Saarikallio
Head of the Jyväskylä Organizing Committee, University of Jyväskylä

Hannu Ikonen
Head of Finnish Music Campus and Secretary-General of EduFutura Jyväskylä

Heikki Hanka
Head of Department, Department of Music, Art and Culture Studies, University of Jyväskylä

Markku Pöyhönen
Coordinator, Department of Music, Art and Culture Studies, University of Jyväskylä

Taru-Maija Heilala Rasimov
Conference Coordinator, University of Jyväskylä

Johanna Muhonen
Producer of Finnish Music Campus

Tinna Riuttanen
Head of Media and Communication Services of EduFutura

Mikko Leimu
IT support team, Department of Music, Art and Culture Studies, University of Jyväskylä

SEMPRE

Society for Education, Music and Psychology Research

All full papers and posters initially submitted to the ISME Research Commission Seminar were blind peer-reviewed by the Commission. All roundtable and poster proposals accepted to be presented at the 34th ISME World Conference and presented at this seminar, were previously peer-reviewed by the Research Methodologies Panel of the ISME 2020 Scientific Committee.



Papers

Rhythm and Reading

J. Riikka Ahokas, Suvi Saarikallio

Department of Music, Art and Culture Studies, University of Jyväskylä, Finland

Abstract

The aim of this study was to study the effect of rhythmic-oriented music lessons in executive functions and reading comprehension. The intervention study was executed in one Finnish Primary School ($N = 58$) during the autumn semester of 2017. The test battery in this intervention study included reading comprehension and working memory tests, and the follow up of reading abilities lasted until the end of the spring semester 2019. The intervention method was music and movement, a sub subject of music education. During the autumn semester 2017 (approximately 2.5 months) half of the population of 1st and 2nd graders of the school received either specifically designed music tuition (characterized as percussive, body-percussive, music and movement –emphasized lessons) or basic music lessons executed by the same researcher.

Keywords: motor abilities, rhythm perception, cognition, reading comprehension, music and movement.

Music Teachers' Perceptions of Their Initial Training and Their Teaching Practice in Schools

Graça Boal-Palheiros, Pedro S. Boia, Mafalda Fonseca

CIPEM/INET-MD, Porto Polytechnic, Portugal

Abstract

This paper reports part of a research project that has investigated music teacher education and music practices in general schools, through the perceptions of music teacher graduates from a higher education institution. The aim is to understand how a new model of music teacher education implemented in the 1980's in Portugal (Mota, 2015; Swanwick, 1979) has contributed to develop the teaching practice of its graduates, who became music teachers in general schools, and thereby improve school music, regarding current challenges of music education in contemporary societies (Green, 2008; McPherson & Welch, 2012; Teachout, 2012). The paper presents a brief outline of different models of music teacher education in Portugal, it reflects about the relevance of music teachers, and it analyzes the music teachers' practices and experiences in general schools through their own perceptions. The method is a case study of a School of Education as an example of the 1980's reforms in music teacher education in Portugal. A semi-structured interview was carried out with twenty music teacher graduates who had responded to a questionnaire on the same topic, in order to understand their perceptions about (a) the relevance of their initial training to their profession; (b) their music teaching practice – musical activities, repertoire and resources used; (c) their teaching experiences, including the most positive, the least positive and transformative experiences. The results indicate that participants' opinions about their initial training were overall positive, suggesting that the course has been shaping their professional practices, in particular, their reflexive attitudes and the musical activities they carry out with their pupils. They also suggest that positive changes might have occurred in school music education as a result of the new teacher education model, among other factors. Participants' positive music teaching experiences reveal a great dedication to their pupils' learning, and their negative experiences are mainly attributed to their pupil's indiscipline, which is reported as a serious problem in schools. Their transformative experiences seem to be related to non-routine situations, which is an interesting finding to better understand their teaching practices. This understanding is crucial for reflecting upon both initial and continuing music teacher training and improving children's music education in general schools.

Keywords: music teacher education, music teaching experiences, school music education.

Introduction – background and aim

The relevance of music teachers

In a rapidly changing world, music education faces complex social, cultural and political challenges, such as technological evolution, increasing accessibility to music, demographic changes due to large population migrations, social inclusion, globalization and cultural diversity, but also cultural hegemony (Green, 2008; Jorgensen, 2019; McPherson & Welch, 2012). Today's concept of music education extends beyond classroom music, interacting with community music in diverse non-formal or informal contexts. Thus, rather than remaining a minor subject in the curriculum, music education can have a central role in schools and communities (Elliott, 2012). Although music teachers often feel unrecognised by their school communities and the society, they must be prepared to respond to those challenges (Teachout, 2012).

For decades, educational issues have focused upon reforms of school curricula. Today's concerns turn to teachers as key elements in promoting learning (Nóvoa, 2007) and as active agents in analysing their students' and their own progress (OECD, 2005). Teachers have more impact than school programmes or other resources (Boal-Palheiros, 2014).

Teacher quality matters (Rice, 2003), as the most important school-related factor influencing student learning and achievement (OECD, 2018). Beyond academic qualifications and experience, personal characteristics (e.g., enthusiasm and creativity) deserve more attention in teacher education (OECD, 2005). The success of reforms requires teachers' active involvement in sustaining quality and engaging in life-long professional learning (Marcelo, 2009). Therefore teacher initial education and professional training must remain a priority.

Effective teaching requires knowledge about the content, mastery of educational techniques (models, strategies, procedures), and reflexive attitudes towards own practice, while regarding teaching and as a process of continuous learning, reflection and transformation (Arends, 2012; Shulman, 1987). Studies on novice versus experienced music teachers suggest effective music teaching as the mastery of a complex set of competencies, which involve not only musical and pedagogical skills, but also personal characteristics, such as leadership, communication, or adaptability (Brand, 2009; Colwell, 2011).

Different models of music teacher education in Portugal

Until 1986, music in Portuguese general schools was taught by teachers, the majority of whom aimed at becoming instrumentalists. They were prepared with musical but no pedagogical training at Music Conservatoires, which were not integrated into higher education and therefore could not offer academic degrees. Teachers acquired in-service training in schools from more experienced colleagues. They also took continuing education courses, offered mainly by private institutions.

In the 1980s Portugal undergone important political, social and educational changes, and reforms in higher education, basic and specialist music education, and music teacher education (Boal-Palheiros, 1993). The creation of the Polytechnic Schools of Education brought important changes in teacher education (Luiz & Faria, 2002) for Pre-school and Basic Education (DR, 1986a, 1986b).

Initial music teacher education was implemented for the first time in higher education in 1986 at the School of Education (SE) of the Porto Polytechnic. The four-year degree 'Teachers for Basic Education – Branch Music Education' adopted an integrated model including *Educational Sciences, Generalist Education* (Languages, Mathematics, Sciences, and Arts), *Music*, and *Teaching Practice*. It offered teaching practice throughout four years in progressive stages of observation, cooperation and teaching, articulated with research and reflection (Schön, 1987). The compromise between generalist and specialist music training in this 'mixed' model was a constraint for some students, who had already invested years studying a musical instrument. However, a strength of the course was its emphasis on innovative concepts and practices in music education, based on listening, performing and creating music; a comprehensive repertoire, including contemporary music; and active music pedagogies oriented towards children's music making (Paynter, 1982; Swanwick, 1979, 1999; Wuytack, 1970, 1989). When compared to the former training at the music conservatoires based on musical performance, and reading and writing skills, these innovative practices were expected to improve music teacher education and school music.

Music teachers' practices and experiences in general schools

A number of personal factors may influence music teachers' paths, practices and effectiveness in general schools, such as their musical and learning experiences from early childhood onwards; their socio-cultural background; their musical identities,

personalities and characteristics; and their own teachers from primary school up to higher education. Other political, social and educational influences may be relevant, such as their teacher education, type of job, and specific school contexts and communities where they work, including pupils and colleagues. This study focuses on the influence of initial teacher education on the music teachers' practices, including the curriculum and coursework, musical and other experiences as higher education students, and the school contexts where they have carried out their preservice training.

There tends to be a direct link between beginning teacher effectiveness and quality of preservice preparation. Evaluating their own preservice training, early-career music teachers recommended a course that prepares them better by focusing on both pedagogical content and professional knowledge and skills, and by contextualizing learning (Ballantyne, 2006). Revisiting the teaching model at Porto SE, Mota (2015) advocates a music teacher education based on a curriculum centred in the musical activity; articulation between theory and practice; and autonomy of the pre-service teachers to build their own projects. Wiggins (2007) emphasized that music teacher courses should focus on authentic musical practice and learning processes, to foster students' ability to connect their own learning across the curriculum. A recent study (Chua & Welch, 2019) indicates that learning of new teaching approaches and interactions with other teachers seem to have a positive impact on music teachers. The perceived teaching abilities were influenced by the ability of teachers to expand the music culture in their school, to enable pupils' music performance and introduce them to different types of music (ibid).

Both very positive and very negative experiences in music teaching practice may become "transformative", potentially fostering the wider "transformative musical engagement" of teachers and students, advocated by O'Neill (2012, p. 164). The importance of transformative moments is emphasized by Jorgensen (2008). Even moments of silence shared by teacher and students during classes, "when the quick, facile answers did not do" may become transformative by stimulating music educators to "listen" to their "inner teacher" (Jorgensen, 2008, p. 5).

About thirty years after the implementation of a new model which was a milestone in music teacher education in Portugal (Mota, 2015), music education faces new challenges. Therefore, relevant questions arise: What are the current practices of music education in general schools? How has the initial music teaching course responded to the professional needs of its graduates? The present study investigated

graduates' perceptions of their teaching experiences in schools and how the course has been shaping their practices.

Method

The music teacher course at the Porto School of Education is taken as a case study (Stake, 2008) of the 1980's reforms in music teacher education in Portugal. A semi-structured interview was carried out with music teacher graduates who had responded to a questionnaire on the same topic (Boal-Palheiros & Boia, 2018), in order to get a deeper insight into some of the issues previously analysed: (a) relevance of their initial training to their profession; (b) music teaching practice – activities, repertoire and resources used; (c) teaching experiences, including the most positive, the least positive and transformative experiences.

Participants who volunteered for the interview were twenty music teacher graduates (12 female, 8 male), aged between 28 and 51 years, with an experience of between 6 and 27 years as music teachers in the school years 5 and 6 of Basic Education. Most teachers had previously studied at the Music Conservatoire, and half of them later obtained Master's degrees in Music Education.

All interviews were fully tape-recorded and transcribed. The responses to the open-ended questions were categorized and subjected to quantitative and qualitative analysis. Categories were devised from the responses and were subsequently revised. This paper focuses on a selection of those responses.

Results and discussion

Music teacher initial training

All participants regard their initial course as relevant to their professional training. They consider they have learned a lot and acquired pedagogical, musical and teaching skills. Although they reported that the course curriculum lacked music subjects, some thought that a broader curriculum including generalist subjects allowed for more knowledge and work opportunities. The most relevant course contents are those that they consider useful in their teaching practice. Participants also pointed out the importance of their teachers for promoting a continuous reflection upon concepts and practices. Some emphasised that the course's innovative approaches, contrasting with

the previous classical training in music conservatoires, stimulated new approaches in schools: “The course was a fresh approach to music pedagogy”; “It opened our minds”; “We learned many interesting subjects.” Some participants considered that some subjects (e.g., Technology and Special Education) should have been more present in the course in order to have a more positive impact in their professional lives. Others regretted that the course did not teach them enough how to teach instrumental playing and composition to their pupils: “Teaching the recorder in basic school is hard. How do you teach these kids?” Participants wanted more articulation between theory and practice. In other studies, teachers also expressed a need for more “hands-on” teaching experiences, discussion of pedagogical problems and classroom management during their pre-service preparation, in order to prepare them better for their professional lives (Ballantyne, 2006; Carneiro & Leite, 2011; Devries, 2000; Legette, 2013; Roulston et al., 2005).

Music teaching practices

Participants indicated a predominance of music making as part of their teaching, which agrees with the conceptual underpinnings of the course at Porto SE, and suggests that the course has influenced its graduates’ professional practice.

Musical activities

The activities carried out in the music lessons are relevant indicators of their teaching practice (Table 1). Instrumental and vocal practice (playing the recorder and Orff instruments, singing songs), is mentioned by all participants: as one of them points out, “music learning comes through practice.” The recorder is widely used by the pupils because it is financially accessible and practical to carry. One teacher avoids the recorder because of the difficulties in managing the class to play together and in getting a good sound. Other teachers would like to use Orff instruments more, but these are often in poor conditions or are stored in other rooms and therefore it takes a lot of time to prepare them.

<i>Activities</i>	<i>Frequency</i>
Instrumental and vocal practice	20
Listening	13
Composing and Improvising	11
Music history and culture	5
Dance and movement	4
Total	55

Table 1. Musical activities performed in the music classroom.

Music listening (13 responses) includes mainly guided listening (paying attention to specific music elements): “Listening is very important. Pupils don’t know how to listen, so it’s necessary to teach them.” Two participants develop listening activities with everyday sounds (soundscapes) involving smartphones and technology. Other teachers take some time in their lessons for sharing music: “Pupils bring a song of their choice and talk about it (e.g., singer, style, and instruments).” For one teacher, activities are related to repertoire, for example, classical music is used more for listening: “Pupils have the opportunity to listen to a repertoire that they might not listen to otherwise. They have to identify characteristics of the music, so they pay more attention.”

Composition is the third most reported activity (8), and one teacher stresses its importance: “When pupils compose a song they are committed to the music, they created it, it came from them. So we should do more composition.” Six participants teach instrumental improvisation with rules, but they also include experimenting and exploring. Composition is not practiced as often as teachers would like, either because they do not have enough time or they feel it is hard to implement, due to their insufficient preparation.

Five participants reported activities related with *Music history and culture*: “Pupils present their works about composers or musical instruments to the class.” Dance and movement (4) are also referred, although some teachers complain that the lack of space in the classroom prevents them from doing these activities more often. Some teachers report they are not implementing all the activities they would like due to insufficient time or resources.

Musical repertoire

Mills (2005) noted that the repertoire in music lessons has undergone changes, as teachers introduced music that pupils listen to outside of school. According to the author, teachers should promote a varied repertoire and update it regularly. In our study, Classical music (16 responses, three of which include 20th century music), Pop and Rock in Portuguese and in English (15), and Portuguese traditional music (10) are the most often used styles in the music classroom. World music, jazz, hip-hop, and *fado* (a Portuguese folk song, accompanied by the Portuguese guitar) were less mentioned. Participants' reasons for selecting the repertoire include its quality, the specific activity and their wish to present music beyond pupils' everyday listening. Many teachers (12) use the textbook's repertoire, for practical reasons.

Resources

All participants use musical instruments in their lessons, mainly Orff instruments (15 responses) and recorders (14) (Table 2). Some use other instruments such as drums, electric bass, keyboard, guitars, and *cavaquinho* (a small four-stringed instrument of Portuguese origin). Many teachers (17) use textbooks as resources. They explore textbooks' interactive tools for various purposes: projecting and reading sheet music, or evaluating pupils' performance while playing the recorder, with immediate feedback. Participants use these tools because they help reading a score, are appealing to pupils and allow them to practice at home through their smartphones or tablets. Furthermore, the play-alongs give the pupils the positive feeling that they are part of a big band or orchestra.

Teachers also use technological devices (12 responses), such as sound equipment, interactive board, projector, computer and smartboard, as well as online platforms (4), such as YouTube and Google Classroom, among others. According to one participant, Google Classroom facilitates the communication teacher-pupil-parents. Other applications are used to develop composition activities. Involving the learners (Himonides, 2018) and making composition activities more accessible to pupils are among the advantages of using technologies in the music classroom.

Resources	Frequency
Musical instruments	20
Orff [15]	
Recorder [14]	
Guitar [3]	
Rock band [3]	
Cavaquinho [2]	
Brass [1]	
Sound Objects [3]	
School textbook	17
Technological devices	12
Sound equipment [5]	
Interactive board [5]	
Projector [4]	
Computer [2]	
Smartboard [1]	
Online Platforms	5
Youtube [3]	
Other applications (tablets) [2]	
Total	54

Table 2. Pedagogical resources.

Most positive teaching experiences

The most positive teaching experiences recalled by participants took place outside the music classroom or even outside the school: concerts for families and the community (12 responses), and collaborative interdisciplinary projects with other teachers, such as performing musical theatres or composing music after poems (8). As teachers reported:

“I think they enjoyed that the work developed was going to be appreciated by others.”

“It is the culmination of our work, which we take out of the classroom to show to parents and the school community.”

“We had a great choir project involving 120 children. It was fantastic, it was fabulous, and very rewarding!”

“We prepared a music theatre with 80 children, with songs, dances, costumes. These are very good experiences, much better than just teaching music lessons.”

Participants also recalled positive experiences in the classroom whilst teaching Music as an optional subject in school years 7 and 8: “We played with rock band instruments”; “They were able to play, listen, take initiative, we spent the 90 minutes making music”; “We did composition and improvisation activities.” Two teachers asked pupils who play instruments out of school to perform to their class, as “a way to motivate them to keep studying music after year 6.” Other positive experiences were musical games, emotional moments while listening to a song, and including children with special needs in the music lessons.

Participants valued projects and public performances, through which they shared musical experiences with children, their families and the school community, thereby getting recognition of their work and enjoying social interactions with their pupils while rehearsing and performing. These experiences afford, for teachers and pupils alike, “transcendent, almost magical moments that may be potentially transformative for them” (Jorgensen, 2008, pp. 23-24) and may lead to “transformative music engagement” (O’Neill, 2012, p. 163). They can also increase music teacher pride and help teachers to “engage positively with the contexts and environments they operate.” It is important to foster not only functional aspects but also the musical, personal and social dimensions of teachers’ lives (Chua & Welch, 2019).

Least positive teaching experiences

When asked about least positive or negative experiences, participants recalled moments of students’ indiscipline (6 responses) or poor receptivity to certain activities (6): “I felt like I couldn’t captivate those kids, any proposal I made...they were totally indifferent.” Participants also mentioned their own difficulties in teaching songs or instrumental pieces (2), trying to make pupils read musical notation (1), and communicating with parents (1). One teacher mentioned the lack of resources (adequate spaces for school concerts), which was the most reported difficulty in a previous study (Boal-Palheiros & Boia, 2018). One participant could not recall any negative experiences because he feels he can adapt and change strategies before “things go wrong”.

Transformative teaching experiences

Only five participants reported transformative experiences in their teaching practice. One said that teaching older pupils changed her practice towards giving pupils greater autonomy. For another teacher, teaching pre-school children developed her motivational skills, which were then useful for teaching years 5 and 6. Sharing experiences with other colleagues was also pointed out as transformative. As a class director, one teacher felt rewarded for “helping children who have hard difficulties.”

One participant reported that his most negative experience of not being able to motivate his pupils was transformative, because it provoked reflection about practice. Negative experiences can also be transformative, as opportunities for reflecting, learning and improving ones’ practices.

Four participants could not recall any transformative experiences, because they regard them as gradual processes: “I think that all experiences are transformative. Everyday we have experiences that, in one way or another, shape our thoughts on teaching.”

Concluding thoughts

This paper presented the perceptions of music education graduates about their initial course and its relevance for professional training, as well as their current practices and experiences as music teachers in general schools, focusing on musical activities, repertoire, and resources used.

Participants’ opinions about their initial training were overall positive, suggesting that the course has been shaping their professional practices towards active pedagogical approaches: making music with their pupils, through instrumental and vocal practice, listening, composing and improvising, are the main activities carried out in music lessons. They also emphasised reflection about their own teaching as a positive outcome of their learning as preservice students. The most relevant course contents for them are those they consider the most useful for their teaching practice in schools. These teachers are critical about some shortcomings of their training, such as the lack of some subjects that they believe would have prepared them better for their profession.

The reports about their positive music teaching experiences reveal a great dedication to their pupils’ learning and a concern with the satisfaction of the whole school community. Their difficulties in recalling either negative or transformative

experiences might be more complex. Most of them attribute negative experiences to the pupil's indiscipline, which is a real problem widely reported in schools. Their transformative experiences are related to non-routine situations, which is an interesting finding to understand their daily teaching practices and reflect on the ways the school curricula might be organized. Understanding these practices is crucial to reflect on both initial and continuing music teacher training and to improve children's music education in general schools.

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Professional Vocalists' Perceptions of Singing and Theatre Voice Training Sessions: A Multiple Case Study

Melissa C. Brunkan¹, Tricia M. Rodley²

¹ Music Education, University of Oregon, USA

² Department of Theater Arts, University of Oregon, USA

Abstract

Teachers and other professional vocalists are at increased risk of voice disorders. These voice disorders can cause professional vocalists to seek other employment, feel socially isolated, or feel less competent in their professional lives. Past research has indicated benefits to preventative voice programs (Bovo et al., 2007; Duffy & Hazlett, 2004). These programs often draw upon techniques from a variety of disciplines. Two disciplines that employ voice specialists are music and theatre. These types of resources are often available on university campuses, but are not always accessed or examined. Therefore, the purpose of this multiple case study was to examine perceptions of university employees (professional vocalists) of individual voice coaching with singing and theatre voice specialists on their personal work, teaching, and professional goals. The following research questions guided this investigation: (a) What did scores of the Voice Handicap Index (VHI) indicate about potential vocal issues?, (b) What were participant self identified goals and issues and how were those addressed by vocal professionals, (one singing voice specialist and one theatre voice specialist)?, and (c) What did participant perceptions indicate about the vocal coaching process? Participants ($N = 4$) attended two individual coaching sessions, one with a singing voice specialist and one with a theatre voice and dialect specialist addressing voice use issues and vocal goals (as measured by the Voice Handicap Index [VHI], individual weekly journals, and a post-study questionnaire). Participants were professional vocalists affiliated with a large northwestern American university. Scoring of the VHI indicated that two participants were within normal range without likely vocal issues and two participants' scores indicated possible vocal problems. Individual coaching sessions implemented strategies typically used in singing voice or theatre voice training and were focused on vocal issues self identified by participants related to breath, projection, resonance, and tension. Results indicated that all participants found the coaching sessions helpful to their overall vocal function and are discussed in terms of future research and recommendations for voice training in professional vocalists.

Keywords: singing, speaking, professional vocalists.

Introduction - background and aim

Professional vocalists rely on the voice as a primary factor of success in their work. These professionals often experience voice problems as a result of overuse and abuse and state they would likely seek alternate employment if the voice were to become seriously impaired (Titze & Verdolini Abbott, 2012). Professional vocalists often experience increased vocal demand in their work. Increased vocal demand can cause many vocal issues including symptoms of hoarseness, vocal fatigue, limited vocal range, and aphonia (Simberg et al., 2000). Economic, educational, and psychological ramifications of voice issues in professional vocalists, specifically teachers, have been examined (Verdolini & Ramig, 2001).

A growing number of studies have begun to quantify the amount of voice use of teachers (e.g., Masuda et al., 1993; Titze et al., 2007). These investigations report that teacher phonation time is somewhere between 17–23% whereas non-teachers were found to phonate between 6.88–11% of the time (Titze, 2007; Södersten et al., 2002; Watanabe et al., 1987).

Teachers are one of the largest groups of professional vocalists seen in voice clinics for treatment of vocal disorders. For example, more than 20% of teachers ($N = 242$) surveyed by Smith et al. (1997) had missed work because of voice problems. It is estimated that missed work and treatments costs over \$2.5 billion to American school districts each year (Verdolini & Ramig, 2001) and voice disorders in teachers range from 11–38% of the population (i.e., Smith et al., 1998; Simberg et al., 2004). Voice related disorders are more often cited as a reason for missing work in teachers than the general population (Smith et al., 1997, 1998). Further, Simberg et al. (2005) found that teacher vocal distress might be increasing.

Although teachers have been found to phonate more than non-teachers, music teachers have an even greater likelihood of developing voice issues or reporting voice issues (e.g., Mattiske et al., 1998; Titze et al., 1997; Verdolini & Ramig, 2001). Further, music teachers often use their voices more and in different ways than other teachers (Fritzell, 1996; Miller & Verdolini, 1995; Morrow & Connor, 2010). As a result, music teachers frequently experience common vocal issues and are one profession most often seen in voice clinics (Fritzell, 1996; Morton & Watson, 1998; Titze et al., 1997).

Some researchers have also investigated the effects of preventative voice programs (Bovo et al., 2007; Duffy & Hazlett, 2004). The results indicate that these types of programs may be of help to practicing educators at a variety of levels. No

study to date has utilized a multiple disciplinary training approach to address vocal issues in university teachers.

Purpose statement and research questions

Therefore, the purpose of this multiple case study was to examine perceptions of university employees (professional vocalists) ($N = 4$) of individual voice coaching on their personal work, teaching, and professional goals (as measured by the Voice Handicap Index [VHI], individual weekly journals, and a post-study questionnaire).

The following research questions guided this investigation: (a) What did perceptual measures (questionnaires, weekly journals, the Voice Handicap Index [VHI]) indicate about voice use and function as well as potential vocal issues (physical, functional, and emotional)?, (b) What were participant self-identified goals and issues and how were those addressed by singing voice and theatre voice professionals (one singing voice specialist and one theatre voice specialist)?, and (c) What did participant perceptions indicate about the vocal coaching process?

Method

The study examined vocal issues and coaching of professional vocalists and employed a multiple case study design. Yin (2003) defined case study as an "empirical inquiry that investigates a contemporary phenomenon within its real-life context" (p. 13). In alignment with Yin's description we examined voice use and function in the naturalistic setting through participant observations. Further, case study represents a single case within a system bounded by time and place (Creswell, 2012); in this case, the experience of four teachers/vocalists at a northwestern American university. Yin (2003) noted the importance of selecting cases carefully in order to predict similar or contrasting results. Although the participants in this study comprised a convenience sample, they were all at the same university, teaching or presenting on a regular bases and had other similarities in experience.

This investigation included qualitative (participant questionnaires, participant journals, field notes, researcher perceptions, and observations) evidence. Participant journal responses were examined through a process of open and closed coding. Member checking of coding and data was performed. Lastly, triangulation was achieved through various sources of data (participant survey, participant journals, field notes, researcher perceptions, and observations).

Participants

Participants were a convenience sample of four university staff and faculty (one male, three female) from a major northwestern university in the United States who volunteered to participate. Participants were employed by the university at the time of the study. We recruited participants from voice workshop attendees. Four workshop participants (1 male, 3 female) volunteered to participate in the process of examination, journaling, voice coaching, and follow-up. We, the researchers, also functioned as the voice coaches for this study.

Participant one was a 57-year-old female professor of English composition who also worked in an administrative role. She suffered from chronic migraines, was a singer, was post-menopausal, and dealt with asthma throughout her lifetime.

Participant two was a 22-year-old female doctoral student in economics who taught several sections of undergraduate economic courses. She reported suffering from asthma, chronic bronchitis and pneumonia, other health issues with swelling, and a self-perceived highly competitive work environment causing perceptions of distinct gender imbalance.

Participant three was a 48-year-old female librarian who taught several sections of research courses each week. She was a mother to profoundly deaf son, was from the east coast of the U.S., and reported past negative professional reviews of her speech habits.

Participant four was a 56-year-old male teacher who also played clarinet professionally with a symphony orchestra. He reported that late rehearsals, tension in the tongue, daily computer work, and breath issues seemed to impact his vocal function.

Each participant was sent an Institutional Review Board permission form via email as well as the pre-study questionnaire one month prior to the start of the study. Participants then attended two individual voice coaching sessions, one with a singing voice specialist and one a theatre voice and dialect specialist. Each session lasted one hour and was done two weeks apart in order to give the participants time to employ recommended exercises and strategies. Session activities were individualized per participant and tailored to their vocal goals. Following each coaching session, the coach observed the participant during teaching. Field notes were taken and sent to participants in order to perform member checking. Finally, participants completed a post-study questionnaire and returned their responses by email within two weeks.

Measures

A pre-study researcher-constructed questionnaire and the VHI were given to participants two weeks prior to their first voice coaching session. The questionnaire asked participants to specify issues affecting their vocal health and/or function, personal goals for coaching sessions, and current vocal issues.

Weekly participant journaling regarding vocal activity, changes breath and phonation, and other factors influencing voice function were kept by participants and collected for analysis at each of their coaching sessions. The journal forms were identical each week and included the same prompts. The survey was piloted with two graduate students to assess clarity and consistency of text and response. Finally, participants were given a post-study questionnaire regarding perceptions of their voice, recommendations for future work, and reflections on the process.

Results

Each participant completed the VHI prior to participation in the study (Table 1). For each prompt, participants responded with a score from 0 (never) to 4 (always). When scoring the VHI, scores of 0–30 points indicated a minimal amount of voice handicap. Scores of 31–60 indicated a moderate amount of vocal handicap (possible vocal nodules, polyps, or cysts). Finally, a score of 60–120 points can indicate a severe level of vocal handicap (possible vocal fold paralysis or vocal fold scarring).

Participants in this study scored within the first two levels. Participant one (29 points) and four (24 points) scored in a range that indicates a minimal amount of voice handicap. Participant two (59 points) and three (45 points) scored within the range that can indicate a moderate amount of vocal handicap and be indication of individuals with vocal nodules, polyps, or cysts. As pre-study examinations by a licensed speech pathologist did not indicate vocal issues in any participant, vocal issues were addressed through work on vocal behaviors.

Weekly journals and coaching sessions

Prior to meeting for their first coaching session, participants were asked to journal about approximate voice use time, breath, voice health, and perceived issues of voice function. They were also asked to identify personal vocal goals which could guide subsequent vocal coaching. Prior to coaching, we both read participant's goals but did

not speak between sessions so that our chosen strategies would not be influenced by the other's ideas.

Prompt	Participant Number			
	1	2	3	4
My voice makes it difficult for people to hear me.	0	3	2	1
People have difficulty understanding me in a noisy room.	0	3	2	1
I use the phone less often than I would like to.	0	1	1	0
I tend to avoid groups of people because of my voice.	0	3	1	0
I speak with friends or relatives less because of my voice.	2	3	1	1
People ask me to repeat myself when speaking face-to-face.	0	2	2	0
My family has difficulty hearing me when I call them throughout the house	0	0	2	1
My voice difficulties restrict my personal and social life.	2	2	1	0
I feel left out of conversations because of my voice.	0	3	1	0
My voice problem causes me to lose income	1	2	1	1
I run out of air when I talk.	3	2	3	0
The sound of my voice varies throughout the day.	3	2	2	2
People ask, "What's wrong with your voice?"	2	2	1	2
My voice sounds creaky and dry.	1	2	1	2
I feel as though I have to strain to produce voice.	1	2	1	2
The clarity of my voice is unpredictable.	2	3	1	2
I try to change my voice to sound different.	1	2	3	2
I use a great deal of effort to speak.	0	2	1	0
My voice is worse in the evening.	2	2	2	0
My voice "gives out" on me in the middle of speaking.	0	2	2	0
I am tense when talking to others because of my voice.	0	2	3	0
People seem irritated with my voice.	0	1	2	0
I find other people don't understand my voice problem.	0	2	2	0
My voice problem upsets me.	3	2	2	2
I am less outgoing because of my voice problem.	2	3	1	1
My voice makes me feels handicapped.	0	2	1	0
I feel annoyed when people ask me to repeat.	1	1	0	2
I feel embarrassed when people ask me to repeat.	1	2	1	2
My voice makes me feel incompetent.	2	3	1	0
I am ashamed of my voice problem.	0	2	1	0
Total Score	29	59	45	24

Table 1. Participant responses to the Voice Handicap Index (VHI).

Analysis of participant responses were coded for themes. Overall, four themes emerged: (1) breath, (2) projection, (3) articulation, and (4) tension. Breath issues included inhalation, exhalation, and lack of breath. Responses regarding projection included limited range and resonance, whereas articulation included pronunciation and rapidity of speech. Finally, comments on tension included specific areas such as the jaw, neck, and tongue.

Participant were asked to identify personal vocal goals. Participant one identified three personal vocal goals: (1) overall speaking voice, (2) good vocal habits for speaking and singing, and (3) developing a framework to assist teachers she trained in voice use. Self-identified vocal issues included glottal fry and stops when speaking, shortness of breath, and tension in the neck and jaw. Singing voice specialist work included work on breath, singing range, and sliding. Theatre voice work also included breath work, slides, and opening vowels.

For participant two, self-identified goals included sounding less nervous when speaking, less “up talk” at the end of sentences, ability to speak with authority, and having enough breath when speaking. Self-identified vocal issues included, projection, fast, unsupported speech, lack of breath overall, lack of energy in sound, glottal fry in speech, and addressing perception of voice as “little.” Singing voice specialist work included posture/alignment exploration, speaking with inflection, sliding sounds, back breath, and speaking at a distance. Theatre voice work included jaw massage, full breath, slides, connecting breath to sound on exhale, and sustaining sound using gesture.

Self-identified goals for participant three included speaking slower, speaking so that voice fills the room, speaking with intention, reducing filler words, and lecturing more effectively. Self-identified vocal issues included rapid speech, lack of breath overall, lack of resonant sound, limited projection and jaw tension. Singing voice specialist work included addressing resonance, speaking at a distance, inhalation and exhalation, and speaking with varied pitch. Theatre voice work included breath while sitting and standing, forward placement, jaw massage, and conscious breath as transition.

Self-identified goals for participant four included examining vocal use tied to fatigue and sluggish tonguing, singing technique, and the larynx in relation to clarinet tone production and tonguing. Self-identified vocal issues included feeling strain in the throat after practicing, releasing residual “clicking” or a feeling of a lump in the throat, wobble in speaking voice, and feeling of strain during singing. For participant

four, singing voice work included addressing resonance, inhalation and exhalation while singing and playing clarinet, singing in higher ranges, and slides to increase ease of range. Theatre voice work included exploring breath while sitting and standing, humming into forward placement, and breath during exhalation.

Post-study questionnaire

The first question asked participants how their work in coaching supported or impacted vocal goals. Participant one answered, "I have several exercises to practice and a customized list of suggestions to improve my instruction." Participant two responded that "the coaching brought helpful awareness to the connection between breath, body, and sound." Participant three responded that "this process was incredibly valuable for me. I have been practicing the techniques presented to me. It was mind-blowing to realize that my breath problem was not letting enough breath out. My voice has felt stronger when I teach and I haven't felt as much strain at the end of the day." Participant four responded that "the sessions were helpful in my speech, singing and clarinet playing. The breath work was especially helpful."

The second question asked participants if anything unexpected occur through coaching or further self-exploration. Participant one responded, "Not really but I'm pleased to get specific help on using my voice." Participant two stated, "I was delighted at the state of relaxation and comfort I was able to achieve." Participant three stated, "I was unprepared for how connected my voice was to my feelings." Finally, participant four stated, "I didn't expect my singing voice and clarinet technique to be so intertwined."

The third question on the questionnaire asked what participants would continue to explore if additional coaching was offered. Participant responses included topics such as efficient body use, breath support, singing technique, coaching in conjunction with counseling, and more work on resonance.

The fourth question addressed what worked well during the study process. Participant one stated, "the separate, private sessions were great. Each of them contributed valuable insights and did different kinds of work." Participant two stated, "The opportunity to spend some time and focus on, caring for and nurturing the physical and vocal aspects of my professional life were uplifting." Participant three indicated, "this process made me confront problems! And it made me braver. I cannot remember the last time someone asked me to be silly. Embracing voice as a fun thing

was hugely helpful.” Finally, participant four stated “having individual sessions that addressed my personal goals was particularly impactful.”

The last question on the questionnaire asked about suggested changes in the study process. One participant stated that they had no suggestions. The other participants ($n = 3$) stated that they would like more coaching sessions.

Conclusion - discussion

Therefore, the purpose of this multiple case study was to examine perceptions of university employees (professional vocalists) of individual voice coaching on their personal work, teaching, and professional goals (as measured by the Voice Handicap Index [VHI], individual weekly journals, and a post-study questionnaire). As a part of this study, professional vocalists ($N = 4$) received two voice coaching sessions in order to address self-identified vocal issues and goals. It is important to note that the findings of this study are meant to guide future research but with such a small number of participants, cannot necessarily be generalized to a broader population.

Findings of this study indicate there is a perceived need among professional vocalists for vocal training. The individual coaching sessions employed in this study were mainly aimed at breath and voice techniques drawn from singing and theatre voice traditions. Techniques drawn from a variety of disciplines can lend diverse ideas supporting optimal vocal function. This kind of multiple disciplinary collaboration seemed to have positive effects on the participants feeling of efficient vocal function.

The current investigation gathered data over a two-month period. This amount of time does not give a complete picture of change in vocal demand or function. Therefore, it would be interesting to follow professional vocalists for an extended period of time to examine the application of strategies and the potential outcome of those strategies. Further, future research might measure potential changes acoustically in order to gather further evidence.

Optimum vocal function is crucial to professional vocalists. Further, past and present research indicates teachers and other professional vocalists are at risk for voice disorders. Techniques from a variety of disciplines may be helpful to avoid or ameliorate these types of disorders. Continued research is needed to ascertain what type of vocal training and support best supports professional vocalists.

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Bodily Transitions in Rhythm Learning at Primary School

Sabine Chatelain¹, Marcelo Giglio (posth.)^{2,3}, Marcelle Moor²

¹Department of Music Education, University of Teacher Education HEP Vaud,
Switzerland

²Department of Music Education, University of Teacher Education HEP-BEJUNE,
Switzerland

³Institute of Psychology and Education, University of Neuchâtel
Switzerland

Abstract

Music learning can be considered as a progressive embodiment of melodic, rhythmic and harmonic structures. Rhythmic aspects (pulse, metre, rhythm pattern, etc.) can be learned through various embodied activities. Usually, the role of the teacher is to create favourable situations that foster this process of learning as transformation, for example the conceptual understanding of embodied rhythm pattern. Based on previous research, it can be affirmed that rhythm learning implies a transition from spontaneous and common bodily movements to rhythmicity, that is to say, a process of change from one state to another. The goal of this paper is to examine different moments of bodily transitions in order to gain a better understanding of rhythm teaching and learning in primary school classrooms. For this paper, data collected for a collaborative research project has been re-analysed. Three teachers (two generalist primary teachers and one specialist music teacher) were observed working with six to eight-year-old students. Based on three to four videotaped lessons per teacher over six months, bodily transitions during rhythm activities were identified by theory-led coding. A qualitative content analysis of the verbal and non-verbal classroom interactions led to four forms of transitions being identified, taking into account the person who induced the transition, the type of activity and the quality of transitions in terms of fluidity and rupture. The analysis shows the importance of embodied routines for fostering fluid transitions in students' bodily movements during the activity. Ruptures appear to be linked to more theory-based explanations without connections to embodied knowledge. Most of the bodily transitions are induced by teachers, but some transitions are seen to emerge as a result of students' interactions. The findings of this study suggest that bodily transitions can provide teachers with significant information about students' learning processes during rhythm activities.

Keywords: bodily transitions, music teaching, rhythm learning.

Introduction

From a starting point of previous work about rhythm learning in primary classrooms, emphasising teachers' body engagement (Moor et al., submitted) and self-regulated rhythm learning (Giglio et al., 2019), the goal of this paper is to examine bodily transitions during musical activity. From a Vygotskian perspective, music learning can be considered as a process of transformation of students' capacities to interact with their environment (Bruner, 1996; John-Steiner et al., 2010; Vygotsky, 1978). Musical performance enacts musical knowledge including bodily and cognitive aspects (Elliot, 1995). As students are encouraged to act musically, so teachers try to create situations that foster music making and understanding and make the learning process explicit. In collaborative classroom situations, teachers can guide students by modelling and scaffolding (Sangorgio & Hennessy, 2013; Wood et al., 1976). In rhythm learning, one of the main challenges concerns improving coordination between surface structure, like rhythmic patterns, and deep structure, like pulse and metre (Gordon, 1997), by engaging bodily movements.

In active music pedagogies developed by musicians such as Jaques-Dalcroze, Kodaly or Orff, body engagement plays an important role. In Dalcroze eurhythmics, bodily movements are derived from natural rhythms like breathing and gait, which are useful for modelling the measure and division of time. Nevertheless, as Bowman and Powell (2007) conclude in a survey on the body in a state of music, not all forms of embodied experience are musical, but all musical experience is embodied. As pointed out in a study about professional arts education, students learn how to transform their everyday corporality to a specialised musical corporality (Mili et al., 2013).

In primary music education, rhythm teaching and learning can be considered from an embodied cognition perspective, focusing on the relationship between body, mind and environment (Bremmer, 2015). Modelling specific musical gestures is thus an important step in music learning via teacher-student interactions. In order to improve rhythm learning, it is relevant to identify students' bodily transitions produced during these activities.

Theoretical background

Rhythm learning in primary classroom

From a Jaques-Dalcroze perspective, rhythm learning is deeply anchored in body movements related to space and time. Students learn through music, as perception and performing rhythm are interdependent (Maes & Leman, 2013; Phillips-Silver & Trainor, 2005). Gestures are goal-directed and communicate meaning (Leman, 2010). However, the role of gestures in musical performance, compared to in teaching, should be distinguished (Fatone et al., 2011). Musical gestures can be described as body movements that are related to specific sound and that communicate ideas or meanings (Jensenius et al., 2010). The differences between musical gestures in teaching or in musical performance are linked to the roles of modelling and repetition in a pedagogical context (Fatone et al., 2011).

In primary classrooms, teachers seem to prioritise imitation and modelling to foster rhythm learning. As Bremmer (2015) points out, teachers are able to simultaneously transmit and instruct rhythm skills in physical ways as well as interact with and react to students' proposals. The author underlines that gestures can communicate musical content, and at the same time be used for pedagogical purposes. Teachers communicate information using various means. They use language (talking about rhythm), gestures (representing aspects of rhythm visually), voice (chanting rhythm with words, syllables or open sounds with or without pitch) and modelling instrumental gestures (playing rhythm patterns on an instrument). The implication of the whole body enables teachers to simultaneously "blend content and pedagogy in real time during a rhythm activity" (p. 180). Bremmer notes that during rhythm activities, teachers' use of language diminishes and they rely more on gestural and musical communication. Body movements seem to help them to express pulse and metre, rhythmic phrasing and the expressive character of a rhythm all at the same time. The author observes that these teachers enact body movements even if they can't describe them. Metaphors stimulating imagination are used to enhance students' rhythmic activities. To develop students' autonomy, teachers could gradually stop scaffolding. Students eventually become attuned to their peers or to music instead of to the teacher's model. In the observed context, teachers' roles consist of "possibly being able to anticipate and communicate a change in rhythmic movements or rhythm patterns *in time* during the unfolding of music" (Bremmer, 2015, p. 198). Bremmer

observes that non-verbal dialogue plays an important role in regulating preschool students' actions. Nevertheless, the place of verbal interactions should be reconsidered with older children as shown in a study on self-regulated rhythmic learning. After observing three primary school teachers for three lessons each, verbal interactions were identified as an important factor for improving learning, helping students to self-regulate their perception and performance skills and conceptualisations of simple rhythm patterns (Giglio et al., 2019, submitted). The main difficulty to overcome in order for students to act musically is learning to play rhythm in a set frame of space and time, transitioning from everyday bodily movements to specialised musical gestures, in other words, transitioning from corporality to rhythmicity (Bidet, 2007).

Transitions in rhythm learning settings

In psychocultural psychology, transition concerns the rupture of a form of routine, and adaptation to a new situation (Zittoun & Perret-Clermont, 2002). Transitions can be more or less progressive and are characterized by fluidity and rupture. This principle can be transferred to the process of rhythmic learning. Transition can be fluid in cases of continuous adaptation and an absence of rupture. In the context of this study, bodily transition can be defined as a passage from one state to another, characterised by fluidity or rupture during verbal and non-verbal interactions in a rhythmic task.

Based on previous work about music teaching and learning in the classroom (Giglio, 2018), several forms of bodily transitions during rhythm activities are mentioned, for example:

- from a "static body" to a "body in movement";
- from common everyday gestures (walking, speaking, breathing, clapping, etc.) to rhythmic gestures;
- from metaphors or analogies to rhythmic gestures;
- from observation of technical musical gestures to performance of technical musical gestures.

Considering learning as a transformative process, it seems important to look, not only at the results, but also at the process itself in terms of transitions. The goal of this paper is to examine different moments of bodily transitions in order to gain a better understanding of rhythm teaching and learning in primary school classrooms.

Aims

This study aims to understand forms of bodily transitions produced during teacher-student interactions in primary school classrooms during rhythm activities. Two questions are formulated:

- What bodily transitions emerge in these rhythm-learning situations?
- How are these bodily transitions produced during teacher-student and student-student interactions?

Methodological approach

This exploratory study which is part of a broader research about the role of the body in rhythm learning, analyses specific moments during rhythm learning activities in ordinary music lessons at two Swiss primary schools. Three teachers, one music teacher (Mia) and two generalist teachers (Gina and Fanny¹), are observed during three or four music lessons in classes of six to eight-year-old students. Each lesson is videotaped, and each teacher is invited to comment on excerpts of their lessons. Firstly, teacher-student interactions are analysed, especially in terms of body engagement (Moor et al., submitted) and self-regulated rhythm learning (Giglio et al., 2019). For this study, repeated observation of the data (11 lessons), led us to analyse the quality of transitions in terms of fluidity and rupture, the type of activities involving more or less theoretical knowledge and the agent (actor/person) who induced the transitions. The moment of transitions is identified as the passage between one activity and another. A transition takes place, for example, when pupils execute a rhythm pattern by using the voice and then change to using body percussion.

In order to better understand the link between these elements, the videos are analysed using selected coding provided by two researchers with a focus on moments of transition in bodily rhythm activities. Based on a qualitative approach for video data analysis of classroom teaching (Jacobs et al., 1999), different forms of transitions are observed which are considered as an emerging phenomenon of teacher-student and student-student interactions. Three steps of interpretation are used in order to generate categories. Firstly, different forms of transitions are signalled in reference to the theoretical framework (Giglio, 2018). Then, these transitions are compared with

¹ Fictive names.

different kinds of interactions as described by Bremmer (2015). Finally, these categories are linked to the teaching situations in order to identify aspects which foster or hinder fluid transitions. Similarities and differences in interactions during these moments of transition are discussed in terms of embodied rhythm learning.

Results and discussion

Transitions from a “static body” to a “body in movement” are the most frequently observed during the lessons. Only three of the 42 transitions observed emerge during collective rhythm activities between students. The other moments are mostly elicited by teacher actions. In the following section, similarities and differences in teacher strategies used in order to engage students in embodied rhythm learning are discussed.

Teacher-student interactions: Inducing movement and rhythmic gestures

Transitions from a “static body” to a “body in movement” are predominantly induced by non-verbal modelling and verbal instructions. During the lessons observed, each teacher emphasises a different aspect, leading to more or less fluid transitions.

Form of transition 1: Non-verbal modelling and verbal instructions

In order to induce musical gestures, all three teachers demonstrate movement and ask the students to imitate and repeat. During these moments, teacher Gina (generalist teacher) mostly uses repetition of the same pattern (short – short – long). Short instructions help the students to be engaged bodily by imitating her model. The rhythm pattern is embodied through variation of the body percussion movements associated with speech (e.g., each student spells his or her name on the pattern performed by the whole class) in lessons 1 and 2. Fluid transition is insured by the collective rhythm pattern within which each student places his or her first name. The collective frame of pulse and metre allows students to adjust their solo performance. By establishing routines, moments of transition do not provoke a rupture of aforementioned routines, but help to further strengthen rhythm pattern performance synchronised with the pulse. The whole group repeats the child’s name, providing instant feedback within the temporal flow. For example, students spontaneously adapt

to the rhythm of a name to the metric pattern by changing the rhythm of the syllables, for example, I-sa/- belle, Jan/_ or Ke/-vin.

Teacher Fanny also starts by modelling rhythmic movement, walking on the pulse and clapping the rhythm pattern, eliciting imitations from the students. During the three lessons observed, verbal instructions and descriptions become the dominant form of interaction. Working on the same rhythm pattern combining two short notes and one long note (two quavers and a crotchet), the tasks are mostly constructed by giving verbal instructions and explanations.

Teacher Fanny observes in lesson 1 that some students aren't looking at the score. She indicates the score with her hand saying: "Look at your sheet, look at your sheet and try to play it[...]." In lesson 3, she asks the students to perform the pattern by reading the graphic score on the blackboard. In both situations, students are asked to perform the rhythm patterns by using hand clapping or percussion instruments. During the performance, it appears that students have difficulty connecting the surface rhythm pattern to the deep level structure of pulse.

An explanation for this could be that transitions from one task to another have not been built on embodied routines by gradually integrating different musical layers like clapping a rhythm on a pulse. Instead, verbal explanations have been used to help students understand the rhythmic pattern. In this case, collective musical activity is not so much based on embodied movements. The transition from one task to another is characterised by rupture rather than by gradual adaptation to a new context.

Form of transition 2: Use of metaphors

As Bremmer (2015) suggests, rhythmic tasks can be stimulated by modelling, by verbal instruction and by using metaphors. Teacher Mia privileges the latter by asking students to imagine that their bodies are controlled by a specific member, for example, using a hand, a finger or the nose as a motor (lesson 4). Moreover, the use of everyday objects like clothes-hangers or plastic pipes (lesson 1) can stimulate the transition between everyday movements to rhythmic skills like playing a rhythmic pattern together. The transitions observed during these activities show frequent ruptures. Even if the more creative tasks stimulate exploration of sound-producing gestures, these activities lack the routines necessary for embodying deep structures like metre and pulse. Therefore, transition from exploration to a more structured rhythm task is mostly characterised by rupture.

Form of transition 3: Collective problem solving

During the activities observed, tasks include the use of teaching materials such as rhythm cards or graphic notation. Students in groups of four perform a rhythm pattern by reading a “score” provided by the teacher and finally create and play a new pattern using rhythm cards (teacher Gina), or invent a sentence which includes a rhythmic pattern, encoded beforehand, instead of a word (teacher Fanny). In both activities, the transition from a static body to rhythmic movement is observed. It appears that embodied routines are helpful in managing the transition between reading a written code and performing a rhythm. However, the link between deep and superficial layers like pulse and rhythm pattern appears to be weak in both situations. Students do not explicitly refer to pulse or meter when performing their rhythm pattern. It could be argued that the lack of transition between the graphic code and the performance is closely linked to a lack of understanding the link between embodied concepts like metre and pulse.

Student-student interactions: Transitions as an emerging phenomenon

Until now, all transitions mentioned have been largely induced by teacher actions. Transitions from spontaneous gestures to rhythmic gestures as an emerging phenomenon are observed at three moments only. Students’ collective rhythm movements shift progressively to take on another quality without teacher intervention. This phenomenon appears as a result of students’ interactions. Embedded in a collective rhythm pattern like clapping a new ostinato, chanting a text or trying to produce a rhythm by beat box, students drop out of the pattern by producing a variation, for example, a second pulse or a new word to repeat on a body percussion pattern. By taking into account students’ spontaneous ideas while repeating the sentence “J’aime le chocolat” (*I like chocolate*) and varying it, Teacher Mia fosters fluid transition to the next rhythm being performed (lesson 2). A similar phenomenon was observed when students suggested a new beat box sound repeated by the teacher and whole group (lesson 1, teacher Gina). During a polyrhythmic and polyphonic activity (lesson 3, teacher Mia), one group of students added the pulse spontaneously by knocking their hands on the floor in addition to their vocal ostinato.

In the three situations observed, just a few students first interrupt routines but other students progressively join the new pattern. These examples of fluid transition show how from one routine deeply embedded in collective bodily movement a

variation of rhythm patterns can be produced. In this situation, the teacher acts as a facilitator who observes the students' activity without giving examples to imitate, but by integrating students' ideas into the activity.

Conclusion

The aim of this paper is to identify bodily transitions during a rhythm task in order to gain a better understanding of rhythm teaching and learning in primary school classrooms. For this purpose, different bodily transitions, characterised by fluidity and rupture are identified in teacher-student and peer interactions.

Transitions from a static body to a moving body are easily made by students who have already integrated a rhythmic pattern as a routine. Echoing Bremmer's observations (2015), the teacher plays an important role in modelling and scaffolding students' activity. Firstly, it seems that fluid transitions can be built on within routines shared by the whole group. Secondly, verbal instructions can induce ruptures in learning when disconnected from embodied procedural knowledge. A similar conclusion concerns problem-solving tasks like composing and reading rhythm pattern with graphic cards. Thirdly, some bodily transitions are seen as a gradually emerging result of students' interactions. These results confirm previous research showing embodiment to be an important part of rhythm learning.

Effects of embodiment on music reading skills have been observed, but should be further investigated in a subsequent study. The findings of this study suggest that the identification of forms of bodily transitions can provide teachers with significant information about students' learning processes during rhythm activities.

Due to the relatively small volume of data collected, the results of the present study need to be confronted with further research in the domain of rhythm teaching and learning. The results of this paper can be explored in teacher education, especially for generalist teacher education, by focusing not only on goals and tasks and specific musical knowledge, but also on transitions within activities as indicators for embodied rhythm learning.

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Women in Instrumental Music Education Research: A Content Analysis of the JRME and BCRME

Deborah Confredo¹, Mitchell Davis², Harry Price³

¹Music Education and Therapy, Temple University, USA

²Music, Northwestern State University, USA

³Musicology and Music Appreciation, Kennesaw State University, USA

Abstract

Considering the gender bias apparent in instrumental music, challenges of research productivity that contribute to cases of tenure and promotion, and the responsibilities of professional role models, it is prudent to review the degree to which women have contributed scholarship in this area. The purpose of this study was to analyze contents of the Journal of Research in Music Education (JRME) and the Bulletin of the Council for Research in Music Education (BCRME) from their beginnings until 2019 for the inclusion of instrumental music scholarship contributed by women in the field. The JRME and BCRME were chosen because of their longevity and status as highly impactful journals in the discipline. We considered all issues of the JRME (1953 - 2019) and the BCRME (1964 - 2019), identifying 529 articles ($N_{JRME} = 369$; $N_{BCRME} = 160$) that focused on instrumental music. Categorized data from instrumental articles included: publication year, single/multiple authorship, author gender, methodology, dissertation/thesis, topics, and participants' age/school level. Articles by female principal investigators were subject of further analysis. Frequencies and percentages for the aforementioned categories were calculated. Research methods were identified based on standards used in extant research. Topics were identified by reviewing: titles, keywords (when listed), abstracts, purpose statements, and methods. Three topics were permitted for each article, aligning with previous research practices. Authorship in both journals, and high frequency repeating authors, favored men. Female authorship in instrumental music research in both journals rose steadily since the 1960s but experienced a considerable decline in the decade between 2010 and 2019. Single authorship outweighed multiple authorship among female authors and only a very small percentage of articles were derived from dissertations/theses. Topics covered generally matched those identified in previous research. Female authors engaged in quantitative research considerably more often than qualitative with experimental/quasi-experimental accounting for most of the quantitative research. Female investigators were more likely to engage school-aged subjects than adults. This review has shown that the

challenges females have faced historically in instrumental performance is mirrored in the instrumental music education scholarship found in the two leading US journals in the field. Data from the past twenty years show a stall in closing the gap between men and women who contribute research in the field. Further investigation should be crafted to identify reasons as to why this disparity persists and mentors in the field should work to develop paths by which all scholars might succeed.

Keywords: instrumental music, gender, research.

Introduction

The genesis of the *Journal of Research in Music Education* (JRME) in 1953 was concomitant with the growth of music education graduate programs and “created the opportunity for a community of music education scholars to develop” (Mark & Gary, 2007, p. 349). In further response to scholarly needs, the *Bulletin of the Council for Research in Music Education* (BCRME) materialized in 1963 as a print voice of the newly-formed research council (Page et al., 1963).

While other journals in the US and abroad focus on research in music education, the JRME and BCRME remain the most long-standing and significant in breadth and scope. Their longevity evinces the necessity for timely dissemination of systematic research in the profession. Given the place that these journals occupy in American music education history, it is appropriate to periodically review its contents to unveil trends in investigator focus, professional interest, and authorship.

Background

Extant content analyses of music education research journals uncover and confirm trends in the curiosities of scholars. Understand existing caches of knowledge provokes progress. This premise is founded in the first content analysis of music education research by Yarbrough (1984) who reviewed article matter published in the JRME between 1953 and 1983, the first 31 years. She focused broadly on a diversity of topics, paradigms, and processes. She noted challenges of scholarship cultivation in philosophical research, development of processes in quantitative methodology, and a shift in design sophistication. She identified the trend of authors’ multiple publications from the mid-70s to the 80s, citing a commitment to research in music education. Schmidt and Zdzinski (1993) back this opinion: “Research activity is a primary indicator of the intellectual health and academic status of a field or discipline” (p. 5).

Subsequent content analyses undertook various paths. Schmidt and Zdzinski (1993) reviewed original quantitative articles that were most frequently cited in six journals between 1975 and 1990, generating a list of works used to inform subsequent studies. In their work, the JRME and BCRME represented the journals with a national scope and primary focus in music education. McCarthy (1999) analyzed contents of the first 20 volumes (116 articles) of the *Bulletin of Historical Research in Music Education* (BHRME), finding that topics focused on: music education development; biography; curriculum methods and materials; historiography; resources and reviews, and; analysis of primary sources. Similar to Yarbrough (1984), McCarthy cited growth and development in historical research in music education.

Yarbrough (2002) published an updated JRME content analysis to present scholarly achievement in music education research to include the first 50 years. She cited the downward trend of dissertation publication with a concomitant rise in multiple publications by senior contributors, explaining this as growth in the community of experienced researchers. She delineated research methodologies, noting the predominance of quantitative studies, with an increase in qualitative studies and contemporaneous decrease in other methods. She attributed this to the existence of journals specializing in philosophical and historical methods. Research sample characteristics of the same 50-year period JRME's history revealed that most research samples were drawn from university and college populations, followed by children (Ebie, 2002). Data corroborated Yarbrough (1984) and Kratus (1992). Of all participants, 58% were 18 or older, implicating issues concerning institutional oversight and convenience. Ebie (2002) cited an imbalance of student musician subjects with instrumental/band outweighing all other areas, including string and orchestra.

Subjects in music education research were the focus of an analysis that targeted articles published between 1991-2005 in the JRME, BCRME, and *Contributions to Music Education* (The CME has been published continuously as a 1-2 issue/year journal since 1972 and is overseen by the Ohio Music Educators Association) (Draves et al., 2008). Most frequently studied were university undergraduate students, but an increase in adult subject populations beyond the college years was noted. Studies of youth (infant-high school) appeared to stagnate. Authors speculated a relationship between these findings and an increase in qualitative methodology.

The research strand of the *Journal of Music Teacher Education* (JMTE, n.d.) made it suitable for content analysis. Nichols (2013) reviewed topics and methodologies evident in articles posted in its first 20 years, from 1991 through 2011. Most research

reports used a descriptive method and constituted 35% of all articles published during these two decades. Topics predictably fell under the headings of music teacher education and music teaching. Killian (2016) categorized all of the articles published under her editorial leadership (2010 – 2016), finding that, like Nichols, most articles focused on music teacher educators and methods.

In a comparative analysis between the *Music Educators Journal* (MEJ) and *Philosophy of Music Education Review* (PMER), authors uncovered topical interests of practicing music educators. Articles in the MEJ generally assume a practical nature with content that often reflects extant research. Alternately, the PMER disseminates philosophical research in the field, much like the BHRME confines its reach to the historical paradigm. If publication topic is an indicator, a comparison of research and practical interests provides the profession with exceptional insight into what teachers value. Results show a disparity in values with performance appearing as the only common ground. Trends seem to reflect concerns in the profession (e.g., in the MEJ, an increase in issues of social justice and a decrease in issues of technology; in the PMER, an increase in issues of critical inquiry and a decrease in issues of marginalization, rationalized by the authors that this might reflect a broader focus on social justice).

Articles published in *Update: Applications of Research in Music Education* represent a middle ground between research reporting and methods for implementation. Silvey et al. (2019) analyzed *Update* articles from 1989-2017. Findings indicate a stable distribution of article types with a greater preponderance of reviews of literature and descriptive studies compared to experimental and historical research. Qualitative articles increased, similar to Nichols (2013) and Yarbrough (2002). Studied samples were more often public school personnel compared to university students as cited in other studies, a finding that may reflect the journal's mission. A deficit was cited in string and orchestra participants compared to other student musicians and groups, a finding consistent with Ebie (2002). Topics were wide-ranging; 24 were identified with an instrumental focus.

Studies show that the primary focus of most content analyses of music education journals is subject matter. While some of the cited studies collected author data, none highlighted the contributions of women. Publication in juried research journals is a hallmark of professional productivity that is often a key element in promotion and tenure considerations (Hamann & Lucas, 1998; Schimanski & Alperin, 2018). Engaging in music education scholarship requires commitment beyond teaching (Howe, 2009). Perna (2001) cites the disparity in attaining rank that has long existed between men

and women in higher education. Analysis of JRME editorial board membership revealed that female productivity in music education research outweighed the presence of female editorial board membership between 1983 and 1992 (Humphreys & Stauffer, 2000). While females holding editorships and editorial boards positions for the JRME and BCRME have been present for nearly 50 years (Howe, 2009), gender disparity is evident in instrumental music leadership positions in the profession (Gould, 2003; Sheldon & Hartley, 2012). Since the origination of instrumental music practice and education in the US, gendering and exclusion of women have developed deep and forceful roots (Curtis, 2017; Howe, 2001).

Since 2000, scholarship by US female faculty has risen, but the productivity gap between genders persists (Sax et al., 2002). Sax et al. (2002) suggested that women may have a greater need to engage in activities with a more immediate and direct social impact compared to research publication. Interestingly, gender differences in productivity could not be attributed family obligations (including children), a finding corroborated by Eagan and Garvey (2015). Stack (2004) determined that free time and the age of children appear to be related female publication productivity.

Purpose

Considering the gender bias apparent in instrumental music, challenges of research productivity that contributes to cases of tenure and promotion, and the responsibilities of professional role models, it is prudent to review the degree to which women have contributed scholarship in this area. The purpose of this study was to analyze contents of the Journal of Research in Music Education (JRME) and the Bulletin of the Council for Research in Music Education (BCRME) from their beginnings until 2019 for the inclusion of instrumental music scholarship contributed by women in the field. The JRME and BCRME were chosen because of their longevity and status as highly impactful journals in the discipline.

Method

We considered all issues of the JRME (1953–2019) and the BCRME (1964–2019). We identified 529 articles ($N_{JRME} = 369$; $N_{BCRME} = 160$) that focused on instrumental music, including use of instruments as a sound stimulus and participants identified as instrumentalists. Categorized data from instrumental articles included: publication year, single/multiple authorship, author gender, methodology, dissertation/thesis,

topics, and participants' age/school level. Articles by female principal investigators (PI) were subject of further analysis ($n = 129$). We employed a gender binary system, using first names to identify probable female PIs. All but three names were identifiable as female. A web search confirmed that each was female. Frequencies and percentages for the aforementioned categories were calculated. Research methods were identified based on standards used in extant research (Froehlich & Frierson-Campbell, 2013; Silvey et al., 2019; Yarbrough, 1984).

Research methods were identified using Silvey et al. (2019) as a model. If methodology was not immediately evident, it was determined through the description of the process derived from the paper. A list of topics was generated by combining topics appearing in extant research (Killian, 2016; Nichols, 2013; Silvey et al., 2019; Stambaugh & Dyson, 2016; Yarbrough, 1984). This list was further condensed to reflect predominant issues that were inclusive of specific related subtopics. We added to this list if no predetermined topic seemed appropriate. Topics were identified by reviewing: titles, keywords (when listed), abstracts, purpose statements, and methods. In the initial pass, we permitted multiple topic code assignments. In subsequent passes, articles with more than three topics were reconsidered and limited to three. Neither journal was consistent in identifying an article as based on authors' dissertations or theses. In only some cases this information was made clear to the reader. When this information was not explicitly noted, we consulted ProQuest Dissertations & Theses A&I. Reliability concerning categorization of research methodology and topics was determined by having one of the co-authors randomly select 14 articles ($\approx 11\%$) out of the articles that had been analyzed by the other co-authors. He completed an independent analysis. We focused on the two categories that had the most room for interpretation, research method and topic, resulting in 28 items. Reliability was strong (.88), providing confidence in our topic coding as well as research paradigm identification.

Results

Some 331 PIs were published in both journals. Of authors investigating instrumental music education issues, distribution was skewed heavily towards men ($n_{\text{male}} = 243$, 73.41%; $n_{\text{female}} = 88$, 26.59%). Female PI percentages were slightly higher in the BCRME (28.1%) compared to the JRME (24.4%). Repeating authors counted in both journals were 78 (23.55%), skewed towards men ($n_{\text{male}} = 57$ [73.08%]; $n_{\text{female}} = 21$ [26.92]). High

frequency publication (> 5) was noted in 25% of articles by 16 authors, with men outperforming women ($n_{\text{male}} = 14$ [87.55%]; $n_{\text{female}} = 2$ [12.5%]). The first female PI published in the JRME in 1964, and the BCRME in 1968.

Articles authored by women across all issues in both journals totaled 129 ($n_{\text{JRME}} = 84$; $n_{\text{BCRME}} = 45$). Female authorship in instrumental music research in both journals has risen steadily since the 1960s during which only 4 (10%) of all instrumental articles were authored by women. In the 1970s, female authorship fell to 5% ($n = 3$). Authorship of female PIs investigating instrumental music increased substantially in the 90s ($n = 14$, 22.3%). The increase continued through the 90s ($n = 28$, 27%) and 00s ($n = 40$, 34.8%). This trend peaked at the turn of the century. In the 10s, there was an increase in instrumental studies but a considerable decline among women authors, even though article publication frequency matched the previous decade ($n = 40$, 28.4%). During the 60s and 70s, the percentage of CRME instrumental articles authored by women was substantially greater than the JRME but the trend reversed during the 1980s and 1990s. In the first two decades of the new century, BCRME once again gained traction in the percent of female instrumental investigators.

In both journals, single authorship outweighed multiple authorship among female PIs: Single JRME = 55 (65.48%); Single BCRME = 26 (57.78%). Some singly authored articles were attributed to the publication of a dissertation or thesis. In the BCRME, 20 (12.5%) articles were derived from dissertations; women authored three (15%). In the JRME, 119 (32.2%) articles were derived from dissertations; women authored 24 (20.2%).

Instrumental topics ($n = 47$) covered by women varied widely (see Table 1). Following Silvey et al. (2019), up to three topics could be assigned, as needed, to any of the 129 articles; total topics generated was 252. Unsurprisingly, the most frequent article topic was Curriculum/Instruction/Pedagogy/Teaching Techniques (21.83%), followed by: Rehearse/Perform (8.33%); Perception/Discrimination (6.75%); Evaluation/ Assessment (5.95%), and; Gender/Gender Instrument Bias (5.56%). These five topics constituted 48.42% of all categories. Other topics fell below a 5% threshold.

Topic	JRME		BCRME		TOTAL	
	N	%	N	%	N	%
Access/Inclusion/Diversity/Exceptional Populations	5	3.01	3	3.49	8	3.18
Adult Music Participation	1	0.60	0	0.00	1	0.40
Anxiety	2	1.20	0	0.00	2	0.79
Attention (focus of)	3	1.81	0	0.00	3	1.19
Cognitive Development	0	0.00	1	1.16	1	0.40
Collaboration	1	0.60	0	0.00	1	0.40
Community	2	1.20	1	1.16	3	1.19
Competition	0	0.00	1	1.16	1	0.40
Composition/Improvisation/Creativity	3	1.81	1	1.16	4	1.59
Conducting	4	2.41	0	0.00	4	1.59
Curriculum/Instruction/Pedagogy/Teaching Techniques	35	21.08	20	23.26	55	21.83
Ensemble - Large	2	1.20	2	2.33	4	1.59
Ensemble - Participation	2	1.20	0	0.00	2	0.79
Ensemble - Small/Chamber	0	0.00	2	2.33	2	0.79
Error Detection	5	3.01	0	0.00	5	1.98
Evaluation/Assessment	7	4.22	8	9.30	15	5.95
Expression	2	1.20	1	1.16	3	1.19
Flow	1	0.60	1	1.16	2	0.79
Gender/Instrument Gender Bias	7	4.22	7	8.14	14	5.56
History	5	3.01	0	0.00	5	1.98
Informal Learning	0	0.00	1	1.16	1	0.40
Instructional Materials/Literature/Repertoire	1	0.60	6	6.98	7	2.78
Jazz	3	1.81	0	0.00	3	1.19
Listening	1	0.60	1	1.16	2	0.79
Modeling	1	0.60	1	1.16	2	0.79
Motivation	0	0.00	2	2.33	2	0.79
Music Achievement	1	0.60	0	0.00	1	0.40
Music Reading/Sight Reading	5	3.01	0	0.00	5	1.98
Parents	0	0.00	2	2.33	2	0.79
Peer Tutoring	1	0.60	0	0.00	1	0.40
Perception/Discrimination	13	7.83	4	4.65	17	6.75
Perseverance	1	0.60	0	0.00	1	0.40
Personality	1	0.60	0	0.00	1	0.40
Practicing	3	1.81	1	1.16	4	1.59
Preference	4	2.41	2	2.33	6	2.38
Private Instruction	1	0.60	0	0.00	1	0.40
Recruitment/Retention	3	1.81	3	3.49	6	2.38
Rehearse/Perform	19	11.45	2	2.33	21	8.33
Reliability/Validity	0	0.00	1	1.16	1	0.40
Research	2	1.20	0	0.00	2	0.79
Social/Emotional Responses	3	1.81	2	2.33	5	1.98

Teachers: Education	6	3.61	4	4.65	10	3.97
Teachers: Effectiveness	3	1.81	1	1.16	4	1.59
Teachers: Identity/Satisfaction/Workload/Salary	2	1.20	1	1.16	3	1.19
Teachers: Professional Development	1	0.60	3	3.49	4	1.59
Technology	3	1.81	1	1.16	4	1.59
Urban Education	1	0.60	0	0.00	1	0.40
TOTAL	166	100	86	100	252	100

Table 1. Instrumental research topics covered by women in the JRME and BCRME.

Research methods cited were 86 (JRME) and 46 (BCRME) (see Table 2). Female PIs engaged in quantitative research (76.51%) more often than qualitative (22.73%). Experimental/Quasi-Experimental accounted for most of the quantitative research (61.39%). When research relied on participant groups, female investigators were more likely to engage school-aged subjects (48.74%) than adults (25.321%). However, when college students are included in the adult group, the balanced shifts (school-aged = 31.1%; adult = 42.86%). Studies with combined participant groups constituted 26.05%.

Discussion

Considering the history of women in instrumental music education over the years, it is no surprise that the emergence of female scholars reflected in JRME and BCRME publication was slow to grow. Although the frequency of instrumental investigations by women PIs increased, their contributions trail male counterparts. Worse, the gap in proportionality of contributions between men and women has widened in the past decade. Further, far fewer women chose to publish an article derived from a dissertation or thesis compared to men. Gender distribution among graduate students in instrumental music education and in professorial mentoring might provide insight into whether gender distribution in published scholarship conforms or contrasts.

There appears to be a palpable disparity in scholarly contributions to the field of instrumental music education between genders. The inclusion of women in instrumental music scholarship mirrors the history of women in instrumental music performance and leadership. These data demonstrate an imbalance that could be perceived as gender bias in instrumental research. Causes for these disparities are not obvious; future studies should be trained on explaining these findings.

Methodology	JRME						BCRME						JRME BCRME	
	60s	70s	80s	90s	00s	10s	60s	70s	80s	90s	00s	10s		
Quantitative													66	35
Content Analysis	0	0	0	1	0	1	0	0	0	0	0	0	2	0
Descriptive	2	0	2	5	6	4	1	0	0	2	8	4	19	15
Quantitative - Regression	0	0	1	0	1	0	0	0	0	0	0	0	2	0
Quantitative - Experimental/ Quasi- Experimental	0	2	7	12	14	8	1	0	2	4	6	6	43	19
Reliability	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Qualitative													20	10
Action Research	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Case Study	0	0	0	2	0	3	0	0	1	0	2	2	5	5
Multiple Case Study	0	0	0	0	0	5	0	0	0	0	1	2	5	3
Exploratory	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Historical	1	0	1	2	0	1	0	0	0	0	0	0	5	0
Mixed Methods	0	0	0	0	0	3	0	0	0	0	0	0	3	0
Phenomenological	0	0	0	0	0	1	0	0	0	0	1	0	1	1
Position Paper	0	0	0	0	0	0	0	1	0	0	0	0	0	1
TOTAL	3	2	11	22	22	26	2	0	3	7	19	15	86	46

Table 2. Research methods used by women investigating instrumental music in the JRME and BCRME, organized by decade, 1960-2019.

As might be expected, our list of topics generally matches those identified in previous content analyses. We did not uncover many that could not already be categorized according to organization found in extant literature. We created a separate listing for a few issues that did not readily conform to other categories (e.g., anxiety, collaboration, flow, technology). The reprise of other categories identified in previous research may indicate that there is a continuing commitment by researchers to develop caches of knowledge towards professional improvement. While we did not compare

topics chosen by male and female authors, it will be interesting to review the data to determine whether gender plays a role in areas of research interest in instrumental music.

In other fields, it has been demonstrated that women are more likely to engage in qualitative research methods compared to men (Plowman & Smith, 2011; Williams et al., 2018). Our findings show that the paradigm of choice among *women and men* was quantitative, leaving us to wonder whether or not the subject matter of instrumental music had bearing: would a review of studies that focus on singing or general music reveal different trends in methodology?

In investigating the possible causes of our findings, it is necessary to understand why women choose whether or not to publish in these journals. Perhaps they are encountering obstacles in the review process, or are focusing on other journals or other methods of research dissemination. We wondered whether issues in their professional and personal lives influence their decisions. What impact do workload, job expectation, and family have on how women choose to effect scholarly and creative activity? Are female instrumental music teacher educators being mentored in processes of research and publication, who are their mentors and, what characterizes the mentoring processes? To what extent does gender play a role in mentoring inexperienced male and female researchers in instrumental music studies?

It is troubling that high-frequency repeating female authors in the field were limited to only two. While it could be that some may decide not to submit to the JRME or BCRME, opting for other journals instead, it bears further investigation as to why the number of high frequency authors over the years has largely been the realm of male contributors. Insofar as publication in these journals often weighs prominently in tenure and promotion cases, and they are widely read in the US and around the world, it is curious that so few women in instrumental music are represented.

Conclusion

This review has revealed that the challenges females have faced historically in instrumental performance are mirrored in the instrumental music education scholarship of arguably the top two US journals in the field. Data from the past twenty years show a stall in closing the gap between men and women who contribute research in the field. Further investigation should be crafted to identify reasons as to

why this disparity persists and mentors in the field should work to develop paths by which all scholars might succeed.

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Impacts of a Master's Degree in Music Education on Publication and Professional Performance of Graduates

Sergio Figueiredo

Universidade do Estado de Santa Catarina, UDESC, Brazil

Abstract

The impacts of graduate studies and the follow-up of graduates are relevant points to be considered in the evaluation processes of master's and PhD programs in Brazil. This study aims to analyse the impact of a master's degree course in music education on the academic and professional activities of graduates between 2009 and 2019. The Brazilian literature has been expanded with studies related to the follow-up of graduates and postgraduate professional impacts, and some Brazilian authors were selected for this text, together with foreign authors. In all Brazilian texts consulted and analysed, authors emphasize the need for further studies on this theme related to the impact of postgraduate studies on society in general. The methodology includes two phases, involving 22 graduates. The first phase consisted on documental analysis from the graduate's curriculum available in a Brazilian information system - *Plataforma Lattes* -, where information was collected mainly concerning academic productions of 22 graduates after the master's course. The second phase was the application of a questionnaire, with the purpose of knowing the perspectives of 22 graduates on the impacts of the master's degree in their professional lives. The results show that the academic production of the graduates participating in this study is varied, presenting publications in journals, book chapters, texts in proceedings. However, this production is unevenly distributed, presenting three egresses with several items, seven egresses with one or two items, and 12 egresses who do not present any type of publication after their master's degree in the analysed period. The answers of the participants indicate positive impacts, both with regard to learning and professional development, as well as entering the academic research activity. New investigations would be relevant for further studies regarding the impacts of postgraduate courses, in order to contribute to the understanding and possible revisions in the processes of preparing researchers in the field of music education.

Keywords: music education, postgraduate studies, impacts, graduates separated.

Initial considerations

Postgraduate courses in Brazil are regulated and evaluated by the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* – CAPES (Higher Education Personnel Improvement Coordination – CAPES), which is a foundation of the Ministry of Education, which “plays a key role in the expansion and consolidation of *stricto sensu* postgraduate education (Masters and PhD) in all states of the Federation” (CAPES, 2019a). For several years, CAPES has been developing a set of procedures and standards for postgraduate courses in all areas of knowledge, including aspects related to program evaluation. This evaluation includes reports on various aspects related to graduate programs, such as planning, academic production of teachers and students, self-assessment, internationalization, impacts, among others.

Regarding the impacts of postgraduate studies, a document published by CAPES, regarding the Arts/Music area, highlights two dimensions: “diffusion of the produced knowledge and human resources preparation” (CAPES, 2019b, p. 13). The dimension that refers to the diffusion of the produced knowledge considers that one of the evaluated parameters is the geographic reach - local, regional, national and international - of the bibliographical, artistic and technical productions of teachers and students, respecting “the identity and the objectives of the program” (p. 13). Another parameter related to the produced knowledge refers to the quality of the productions, considering publications and artistic presentations related to specific indicators, such as *Qualis*, which is a bibliographic and artistic evaluation system also organized by CAPES.

The second dimension of postgraduate impacts, according to the Arts/Music document, refers to the preparation of human resources “in terms of their professional insertion” (CAPES, 2019b, p. 14). For this dimension, the document considers places of students and graduates activities, indicating, in some way, how the received preparation impacts professionally those who have done postgraduate studies in the Arts area.

From these initial considerations, the purpose of this paper is to present elements related to the impact of graduate studies, considering a Master’s Program of a university in Southern Brazil. This study is a continuation of a research that has been done by the Music and Education Research Group – MUSE, in Brazil, regarding the follow-up of graduates (Schambeck et al., 2019). For the current study, 22 graduates from a postgraduate music program who completed their master's dissertations between 2009 and 2019 were selected, and all of them were guided by the same

supervisor. Thus, data collected about these graduates in terms of bibliographic production and professional activities present perspectives related to the impact of postgraduate studies, which will be analysed in this text. Academic production data were collected on the *Plataforma Lattes*, which is a Brazilian information system that integrates academic curriculum, research group information and institution databases. Data regarding the impact of graduate studies in professional activities were collected from a questionnaire sent electronically to the research participants.

Postgraduate impacts

The impacts of postgraduate studies in terms of academic productions and the follow-up of graduates, mainly related to professional performance, are some of the themes that have been studied by Brazilian authors. From different perspectives, several elements are discussed, highlighting the multiplicity of possible approaches to have a picture about the impacts of postgraduate studies on society.

Internationally, authors have been presenting several studies that somehow address issues related to the impacts of postgraduate courses in various professional activities. Authors like Horn and Jang (2017), Conway et al. (2009), Ladd and Sorensen (2015), and Coenen et al. (2018), discuss aspects related to the impact of postgraduate courses on teacher education and professional activities in different contexts and educational levels.

Freitas and Souza (2018) discussed issues related to advisory processes in graduate programs in education, music education and psychology, highlighting the “highly productive character” (p. 127) at this educational level. Brazilian literature has presented discussions about the increasing demand for bibliographic products for postgraduate teachers and students (Café et al., 2017), generating what has been termed academic productivism (Leite, 2017). The demands of academic production are increased, in many cases compromising the quality of such production, generating “a frantic competition for more ‘available’ journals” (Freitas & Souza, 2018, p. 130). One of the points highlighted by the authors concerns the requirements of graduate programs at a pre-established time, which has generated constant pressure on both students and teachers who must meet deadlines and tasks. Among the various tasks are disciplines, supervision, research development, dissertation or thesis writing, as well as “a bibliographic product, preferably already accepted for publication” (p. 130). Increasingly, there is a worsening of “the pressures of the postgraduate system to

charge more products at a time that is increasingly quantitatively efficient" (p. 137). The authors also argue about the need to think about the pedagogical preparation of teachers and supervisors, with the purpose of contributing to the formation of "researchers who learn to teach and teachers who learn to research" (p. 139).

A study by Luhning et al. (2018) analysed issues related to the professional impact of master's and doctorate in music in graduates of a Brazilian higher education institution that has offered such courses for 25 years. The authors argue that, for several years, one of the goals of Brazilian postgraduate studies was the training for work in a higher education institution. However, not all those with a master's or doctorate will work in higher education. Thus, the study sought to verify, "for what kind of professional performance an academic master's or doctorate in music prepares in addition to working in a higher education institution" (p. 3). The authors found many graduates who work in various professional fields, not only in higher education, highlighting that during the postgraduate training process there should be a care with the diversity of the faculty, able to contribute to the formation from different perspectives, including the improvement of professional practice. The authors recommend, in their study conclusions, "reflections, actions, activities and even disciplines focused on the field of post-formative professional practice in the curricula of PPGs [Postgraduate Programs] in music" (pp. 8-9), in order to better prepare students for the diversity of professional activities.

Figueiredo and Schambeck (2018) presented elements of an on going study on the production of master's dissertations between 2007 and 2017, from a postgraduate program in Brazil, focusing on the area of music education. The study discusses the use of meta-analysis to broaden the theoretical foundations of music education, proposing the analysis of 48 dissertations produced in that time period, guided by five supervisors. For the analyses, several aspects were considered: "choice of the investigated object; description of the research subjects; literature review and theoretical framework...data collections procedures; analysis and indication of the main contributions of the study" (p. 3). The initial results of the analysis show the predominance of qualitative orientation works, directed to basic education and to the teaching preparation and professional performance, among others. Briefly, it can be stated that the works developed at the master's level in that postgraduate program impact music education offered in schools and other educational spaces, both from the perspective of music at school and in the preparation of music teachers.

The work of León (2017) analysed the perspective of graduates of master's degrees in music education in different parts of Brazil, seeking to understand the academic formation at the master's level and the impact of such formation on the professional activities of those graduates. The analyses presented several meanings that the graduates attribute to their experiences with research, identifying various elements of preparation that contributed to their professional performance.

The literature presented here briefly illustrates part of studies that are being conducted considering, mainly, the impact of postgraduate studies and the follow-up of graduates of master's and doctorate music programs in Brazil. Virtually all studies reiterate the need for further studies deepening these themes, using the results to improve training processes in Brazilian postgraduate studies.

Discussion

The academic production after completing a master's degree in music education was verified in the curricula of 22 graduates of a postgraduate program. When consulting curricula on the *Plataforma Lattes*, the first aspect considered was the updated date recorded. All master's students must have their curriculum updated on this platform, so everyone had at least the information by the time the course was completed.

The initial search yielded several results in terms of curriculum update dates, predominantly those updated in 2019. Of the 22 curricula analysed, 17 are updated in 2019, which may represent that graduates are continuously recording their productions since completion of their master's degree. Among the 17 updated curricula are those graduates who completed their courses from 2009 to 2019, that is, in all the years planned for this study. The curriculum of a 2010 graduate is updated until 2018; a 2014 graduate is updated until 2017; a 2012 graduate is updated until 2016, and a 2015 graduate is also updated until 2016; a 2009 graduate updated his curriculum until 2010.

This initial information allows us to state that most graduates ($n = 17$) are keeping their resumes updated on the *Plataforma Lattes*. The others ($n = 5$) present different situations in terms of updating. Keeping the curriculum up to date somehow means a connection with academic subjects, which might suggest that from the master's degree, graduates were impacted by their academic experience.

The information obtained in the *Plataforma Lattes*, updated or not, allowed the verification of the bibliographic production of the graduates, considering articles in

proceedings of regional, national or international events, articles in national and foreign journals, book chapters and books. A 2009 graduate stands out with production of 20 items between 2010 and 2016, containing one chapter of a national book, one article in a national journal, three texts in proceedings of international events, 12 texts in proceedings of national events and three texts in regional proceedings. Another 2009 graduate published nine items between 2011 and 2018, being one national book with his master's dissertation, one article in a national journal, and seven texts in proceedings of regional events. A 2011 graduate recorded six items published between 2012 and 2019, two articles in national journals, one chapter in a national book, two texts in proceedings of national events and one in a regional event. Other seven graduates presented one or two publications in national journals ($n = 5$), in international journals ($n = 1$), in proceedings of international ($n = 2$) and regional ($n = 1$) events. These publications were made near the year of completion of the master's degree. The data collected show that 12 graduates of the master's degree in music education did not publish after the end of the course, which may mean a detachment from research-related academic practices.

Regarding the professional activities of the 22 graduates, the records found were: six higher education teachers, seven basic education teachers, seven music teachers (private or in music schools) and two conductors. The activities are recorded in the curriculum, including those that are not updated, but what can be seen is that all graduates have been working in the field of music, in different types of activities that predominantly involve teaching. It is important to highlight that some of the participants worked in more than one type of professional activity, and for this study, those that were most updated or of the longest duration were considered. Among the 22 participants, three completed their doctorates in the area of music education, one is pursuing a doctorate in music education and the other in education.

Parallel to the *Plataforma Lattes* information collection stage, an electronic questionnaire was sent to the graduates, containing nine open questions with the following topics: (1) total or partial publication of the dissertation; (2) achievement or intention to pursue a doctorate; (3) professional activities before the master's degree; (4) professional activities after the master's degree; (5) conducting other research after the master's degree; (6) positive aspects of the masters course; (7) aspects that could be improved in the master's course; (8) personal and professional impact of the master's degree; (9) other comments. This questionnaire was sent in the first semester of 2019 initially to 48 graduates of the master's course, supervised by different teachers, which

was a proposal of the Music and Education Research Group – MUSE, located at the same university where the present study was conducted. The return rate of questionnaires was low ($n = 3$), and for this reason, the same questionnaire was resubmitted to the 22 graduates selected for this study in the second semester of 2019, obtaining some more answers ($n = 7$). Thus, the data analysed and presented below refer to 10 graduates: one completed the master's degree in 2009, three in 2011, one in 2016, two in 2017, two in 2018 and one in 2019. Most respondents ($n = 6$) have completed the master's degree from 2016, which means they are graduates who finish that master's experience more recently. This may suggest that those who have completed their courses most recently are more committed and willing to participate in academic activities, such as research. However, the low number of answers does not allow us to state that older graduates are not committed to academic activities, and that they may not have the time to properly respond to the questionnaire, and therefore did not submit their answers.

Regarding the professional impact of the master's degree, the 10 graduates who answered the questionnaire presented their professional activities before and after the master's degree, informing to what extent that course had impacted on those activities. One student stated that after her master's degree, all her activities were maintained – teacher of basic education and choir conductor – adding teaching in postgraduate courses (*lato sensu* specialization) and musical and pedagogical coordination of a school network. Two graduates maintained their activities as conductors and music teachers, adding, after the master's degree, activities in higher education. The impact of postgraduate studies in the case of these graduates is evident, because for anyone working in higher education is required to have at least a master's degree. Other three graduates registered their experiences as higher education teachers for some period; one was working as a music teacher in basic education in a Federal Institute. Three graduates keep practically the same activities as they did before the master's degree experience.

The 10 graduates who answered the questionnaire expressed their views on the impacts of the master's degree on their personal and professional lives.

“My professional field has grown a lot: new knowledge, new contact networks, deepening of fundamental concepts for the area, deepening in the research universe” (Graduate 2009).

“The experience of the Master’s degree...marked my life and even after a while, I realize its influence on both my professional performance and the way I view the field of music education, research and studies” (Graduate 1 - 2011).

“Critical thinking; qualification to be a teacher in higher and postgraduate courses” (Graduate 2 - 2011).

“The experiences lived during the master's degree also greatly influenced my choice to continue with my academic training and pursue my doctorate” (Graduate 3 - 2011).

“Professional qualification and insertion in Higher Education” (Graduate 2016).

“After the research process and master's classes, I started to reflect more on my practices and actions as a teacher, musician and researcher” (Graduate 2017).

“In academic planning, ways of teaching, choosing and organizing texts for classes, academic writing, teaching posture in higher education, orientation of undergraduate students, types of assessment and academic research” (Graduate 2017).

“The master's degree was the stage of my life in which I began to understand what a deeper research process means”(Graduate 1 - 2018).

“I consider this experience to be of high importance. Because of the master's degree, today I feel much safer in the development of doctoral research and in my acting as a singer and teacher...There is nothing in my life that has not been impacted by this experience” (Graduate 2 - 2018).

“The completion of the master's degree provided me with bases to build arguments to emphasize and fight for the presence of music in the curricula of basic education” (Graduate 2019).

The citations extracted from the responses of the graduates show impacts related to learning and understanding of the academic research process. In addition, professional

aspects were also impacted, in the opinion of the graduates, as the teaching work was improved from the experience of the master, as well as the vision of music education was broadened and substantiated.

Final considerations

The impacts of a master's degree in professional practice were briefly analysed from a set of information available in a Brazilian database – *Plataforma Lattes*, as well as written answers from graduates. Such information shows, in general, distinct impacts in terms of academic production after the master's degree, and positive impacts in terms of professional performance.

The low number of graduates who keep their resumes up to date, as well as the low number of postgraduate publications, could be further investigated in order to understand the reasons for this situation. The master's degree may have meant an educational experience that was not continued, did not promote new research or publications, but several reasons could be related to this discontinuity in academic involvement.

Other analyses could also investigate relationships between the dissertation produced and the professional activity of the graduates. In addition, the impact of the master's degree production in the field of music education would also merit further investigation, seeking to understand the effects of postgraduate experience for a group of music educators in more depth. These results may broaden the reflections on postgraduate programs, disciplines and activities, especially related to music education in Brazil, strengthening the links between research and professional practice in music education.

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Comparing the Concepts of Sistema in Canada and Argentina to *El Sistema Nacional* in Venezuela

Ana Lucia Frega¹, Julia Brook²

¹Universidad Argentina de la Empresa, UADE, Argentina

²DAN School of Drama and Music, Queen's University, Canada

Abstract

This research paper reports on an examination of the public face of El Sistema and Sistema-inspired programs in Canada and Argentina. This research examined the extent to which these programs reflected El Sistema Nacional program in Venezuela. In addition to examining these contents we used Regelski's (2012) assertion of ethical dimension as a conceptual framework for our analysis. Regelski (2012) argued that merely providing music education was not sufficient; functional and beneficial results are owed to the students, communities and societies. We examined the websites in terms of the contents of the program and also explored how these programs aimed to develop ethical music education opportunities. Analysis of the websites in these two jurisdictions determined that the programs were using a variety of music-making activities to support the learning of the children in their communities. References to the Venezuelan program varied in each jurisdiction, including no reference to El Sistema Nacional on their websites (including their title) while others made references to the power of this program, citing mostly reports that have not been substantiated by peer-reviewed research such as Abreu's TED talk or popular press pieces to support their claims. Based on our analysis of these websites we conclude that these Sistema and Sistema-inspired programs seem to be embracing an ethical dimension to music education, which does not always reflect the practices of the Venezuelan program. The most salient commonality across the programs is a desire to increase access to music education. The lack of consistency in method, genre, and ensemble.

Keywords: El Sistema, comparative music education, ethical music education.

Introduction - background and aim

In Argentina and Canada, access to appropriate and diverse music education is not universally available, and in both location communities and schools are trying to increase access to music education. In Canada music is a curricular subject but performance-based music education vary across provinces, however, the contents of the programs may be restricted based on human and physical resources. Choral and concert band programs dominate, although other types of music-making may exist (e.g., guitar, rock band, steel pan, music theatre). School music programs, along with other arts programs are often sacrificed when there are increasing demands on school resources (human, physical, financial, time). Consequently, many children do not have the opportunity to learn to play an instrument or to sing in schools over a sustained amount of time (Hill Strategies, 2010; People for Education, 2016). Access to music-performance opportunity is variable depending on where you live within the country.

In Argentina music is also mandatory school subject, and its presence in the curriculum is not contested. Music education in Argentina emphasizes creativity and singing and there is currently an emphasis on learning local and other Latin-American repertoire (De Couvre et al., 1998, 2014; Frega & Limongi, 2019a). There is a national curriculum although each state has the ability to customize their curricular content. Access to music educators who feel confident to teach this content are needed. Orchestral music-making opportunities within and outside of formal schooling have never been extensively developed, mostly due to the costs required to import the instruments into the country.

As we develop music education, we must remember that simply providing musical experiences in schools is not automatically sufficient (Regelski, 2012). As we continue to advocate and develop musical opportunities, we therefore have to ensure that these opportunities are ethical:

[T]he ethical virtue of school music is not a matter of simply claiming to have implemented a 'good music program' (e.g., highly practiced select ensembles, a generous schedule of music classes, abundant resources, etc.)....a good music program is an ethical responsibility for clearly functional and beneficial results owed to the students, the community, and society. (Regelski, 2012 pp. 437-438)

The *Sistema Nacional de Orquestas y Coros Juveniles e Infantiles de Venezuela* has become the basis for many music-based programs for underserved populations in

many countries. This program was given its Presidential decree in 1979 (Presidential Decree No. 2092, published Feb 26, 1979). The establishment of a Youth Orchestra program meant that all orchestral instruments needed to be imported. However, Venezuela has one of the largest oil reserves in the world, and in the 1970s enjoyed great wealth. The use of the term “Nacional” in this context refers specifically to a program that is under the umbrella of the state. “[A]s its full name suggests, [El Sistema Nacional] is essentially an efficient bureaucratic organization that keeps the project moving ahead with the main purpose of getting the best of performers from all its Venezuelan centers, who compete to become members of Simón Bolívar Orchestra, the program’s flagship for international publicity” (Frega & Limongi, 2019b, p. 8). The Simón Bolívar Symphony Orchestra has toured internationally including a performance at the Proms Festival in London in 2007 (BBC, n.d.). And In 2009 one of its founders, José Antonio Abreu, was featured on a TED talk where he also touted the positive social changes that this national music program provided (Abreu, 2009), although the mission of using music education to lift children out of poverty was adopted later, and this mandate was also fraught.

Increasing evidence has suggested that these claims around music action for social change were not substantiated by a well- defined pedagogical approach or substantial empirical evidence of students’ music learning or social change (Baker, 2014; Baker & Frega, 2018; Logan, 2016). The use of Western-Classical orchestras as a music education vehicle in a place where the instruments need to be imported and choosing Western Classical music rather than the plethora of musics that are germane to Venezuelan culture has also been questioned (Baker, 2018; Frega & Limongi, 2019b). While it is true that some participants of this program have developed into orchestral players, this does not seem to be the norm, and individual musical or social growth was not prioritized over the quality of the ensemble. Baker (2014) suggests the practices and positive outcomes associated with El Sistema Nacional are more of a myth than actual fact leading one to believe that these programs are now empowering individuals but they may actually have limited ability to contribute to their local communities.

Others have used El Sistema term to describe ensemble-based music education opportunities for underprivileged children around the world. Mota and her colleagues (2016) explored the affordances and constraints of El Sistema programs in Venezuela, Portugal, USA and Canada. This research included an interview with a director of a Canadian program and found out that the Sistema title was added after the program

had been established. The Director felt that her program aimed at supporting underserved youth aligned with her understanding of the information presented to her about El Sistema Nacional program.

Literature also describes positive accounts and outcomes of El Sistema-inspired programs in other jurisdictions including Canada (Brook & Kalaydina, 2019; Lorenzino, 2015; Smith & Lorenzino, 2015), the United Kingdom (Garnham & Hawkins, 2017), Australia (Osborne et al., 2016), US (e.g., Hopkins et al., 2017; Simpson Steele, 2017) and Portugal (Mota et al., 2016) among others. These research studies of El Sistema-inspired programs illuminate the positive outcomes of participants as well as document a variety of components that differ from the Venezuelan program. Adopting the notion that El Sistema refers to a concept that is capable of being broken down, we argue that this concept is grounded in one's understanding of the Venezuelan program and thus our research aimed to explore how programs in Canada and Argentina articulated their notions of Sistema through their websites.

The descriptions of El Sistema and music education in both Canada and Argentina provided insights that highlight the different aims and constraints of El Sistema programs, confirming the need for more research that deconstructs these components and in particular examines the public face of El Sistema programs and how the programs relate to the original Venezuelan program. Therefore, the purpose of this research study was to examine the public face of El Sistema programs in Canada and Argentina. The following research questions guided this study:

1. What references do Canadian and Argentinian El Sistema and Sistema-inspired programs make to the El Sistema Nacional?
2. How do the components of these programs reflect the practices and ideals depicted by El Sistema Nacional?

Method

We examined publically available websites of Canadian and Argentinian El Sistema programs. A list of El Sistema programs in Canada and Argentina was found on the Sistema Global (2019) website. The Sistema Global website listed 16 programs in Canada with all of them having either website or Facebook pages. Four of the listed programs had inactive links and information about their programs was also not available through Google searches. We also included one additional El Sistema program in Canada that was not on this original list.

The Sistema Global website listed four programs in Argentina; only one

program had a website and the other three had Facebook pages. We gather information about their programs (accessibility, contents, frequency, funders) using these online resources making note of references to El Sistema Nacional and references to other El Sistema programs. We collated this information and compared the descriptions of the Venezuelan program to other research on this original program and also did a comparative analysis to explore how the structures and contents of these programs in Canada and Argentina compared with this original program.

Findings

El Sistema in Canada

Program names: The term “Sistema” or “El Sistema” was in the title of 7/16 programs (El Sistema Aeolian, Sistema Kingston, Sistema Winnipeg, Sistema Saskatchewan, Sistema New Brunswick and Encore Sistema). The other programs were named as follows: St. James Music Academy, The Music Garage, Halifax Music Co-op, Iqaluit Fiddle Club, SONG (Sounds of the Next Generation) and Orkidstra. Of the programs that did not have Sistema in their title, x made reference to El Sistema Nacional stating highlighting the Abreu’s mission to support social change through music For example in Alberta, they align with the ground-breaking program in Venezuela as follows:

Youth Orchestra of Northern Alberta - Sistema (YONA-Sistema) is a program offered by the Edmonton Symphony Orchestra. This program is modeled on the ground-breaking El Sistema project in Venezuela which uses music for social change and teaches the values of unity, harmony, and mutual compassion. (Youth Orchestra of Northern Alberta Website).

The program in New Brunswick also describes the positive effect El Sistema Nacional had in transforming individuals in Venezuela:

What could New Brunswick and Canada learn from the barrios of poverty-stricken Venezuela about social change... and music? We are now finding out. Venezuela is home to a program so extraordinary it has being hailed as

transformational for individuals and the society. Over 400,000 children are now part of El Sistema (the System) and the idea is simple. Any child who comes through the door showing enough enthusiasm and commitment to learn gets the instrument of their choice and free instruction every weekday afternoon and Saturday mornings. The kids wind up working hard at their craft. And their hard work is being noticed. Today, El Sistema is not only producing transformational social change, it is producing among the best musicians in the world.

In 2009, the New Brunswick Youth Orchestra (NBYO) partnered with "El Sistema," completed a fact-finding tour of the South American country, completed a one-year prototype program in New Brunswick and adopted a further 4-year plan to expand and replicate the program throughout the province. Sistema NB now operates six centers, in Moncton, Saint John, Richibucto, the Tobique First Nation, Edmundston, and Miramichi and engages more than 700 children daily (Sistema New Brunswick Website).

Two of the programs, St. James Music Academy, SONG and the Music Garage, do not have any references to Abreu, El Sistema Nacional or any other Sistema, Sistema-inspired or El Sistema program. They have mission statements and goals related to bringing music-making opportunities to children in underserved areas such as: The St. James' Music Academy whose mission is to "Inspir[e] Vancouver's inner city youth to bring social transformation through the power and joy of music." Although this website does quote Abreu as follows "Teach children the beauty of music and music will teach them the beauty of life. Maestro Antonio Abreu" (<http://sjma.ca/our-program/>). This Vancouver program offered singing, movement and marimba classes to support the development of musical literacy, group-based string and orchestral instruction and in some cases for senior students, opportunities to compose and/or learn jazz. A nutrition program was also advertised as was a Music therapy program for differently abled children.

Similarly, The Halifax Music Cooperative - or The HMC describes itself as:

A feisty and passionate not-for-profit organization which brings a forward-thinking perspective to music access, music education and music-making to the residents of the Halifax Regional Municipality....Our mission: To provide access to high-quality music education for instrumentalists of all ages, backgrounds,

financial circumstances and skill-levels; and to do so in a safe, positive and collaborative community- environment, where everyone feels welcome, comfortable and connected. (<http://thehmc.ca/about-the-hmc/>)

These programs were not free, but were rather “pay what you can.” There were also a variety of ensemble including choir, orchestra, jazz band, guitar orchestra, world music ensemble, HMC rock, jazz combos, ukulele class and chamber music ensembles. Programs were not intensive and ran weekly for 10-week terms. Each of these programs seemed to operate independently of one another, thus no national El Sistema network has been established.

All of the aforementioned programs aim to provide accessible and inclusive music programs to children and youth in underserved areas. These programs were predominantly string/orchestral programs that were supplemented with other age and ability appropriate opportunities such as preschool programs, percussion, music therapy programs. Music-making to support rhythmic One program, Iqualit made no reference to Classical Music on its website. Performance opportunities were explicitly mentioned only on four of the 13 websites explicitly stated performance opportunities. The contents of these Canadian programs are much more diverse than El Sistema Nacional program and concerts and touring did not seem to have a dominant place in these programs.

Unlike El Sistema Nacional, the Canadian Sistema aligned programs were not exclusively funded by government funds. Programs could be often affiliated with are run by variety of organizations (part of a concert hall, Symphony orchestra, university, or community school) and are funded by varying combinations of government grants from arts, youth or cultural community funds, philanthropic organizations, corporate sponsors (banks, instrument or music stores), and/or individuals donors. Donations were always being accepted on all the accessed websites.

El Sistema in Argentina

The Global Sistema website lists four entries of programs in Argentina: Fundacion Allegro Argentina, Fundación Sistema de Orquestas Infantiles y Juveniles de Argentina (FSOIJAR), Orquesta-Escuela Mediterranea, and Sistema de Orquestas Juveniles e Infantiles de Jujuy - SOJ Oficial. However, only one of these listings, FSOIJAR, had a live website and SOJ had an active Facebook page. The other two programs did not have a listed website and their Facebook link was broken.

The FSOIJAR, like El Sistema National aimed to goal to support social development through music.

The System Foundation of Children and Youth Orchestras of Argentina (SOIJAR) is a non-profit organization born in 2005 that promotes through music, citizen education, human promotion and community development. Implement a network of orchestras and choirs in Argentina as a socio-educational offer for children and young people that promotes respect for sociocultural diversity, providing institutional, pedagogical and academic support, and putting value on regional projects and actions. Consolidate musical practice in Argentina as a tool for the social inclusion of children and young people, promoting human development with a sense of community. Orchestra-School Methodology: It is aimed at the integral formation -personal and collective- of children and young people from the musical education based on the principles of inclusion, integration, equality, equity and promotion. It was applied for the first time in the Orchestra-School of Chascomús, province of Buenos Aires, since 1998. (English Translation of website)

Unlike the Canadian programs this single FSOIJAR program had a much bigger reach than the Canadian programs indicating that they had reached over 9,500 individuals and operated 14 programs across the nation which included orchestral and choir programs. Funding support listed was provided by foundations such as Mozarteum Argentino, Fundación Musical Simón Bolívar as well as individuals and businesses (<https://www.sistemadeorquestas.org.ar/>). The Argentinian program did not mention the Venezuelan program, which was different from some Canadian programs that had direct mentions of the original El Sistema program on their websites.

Discussion and conclusions

Countless research studies have shown how making music have demonstrated the power of music (see Creech et al., 2016 for an overview of these academic, emotional and social benefits). These findings underscore the importance of considering the ethical dimensions of music programs as they are developed. School and community music programs require well-trained teachers along with appropriate materials that can meet the needs of interests of diverse students who are interested in singing and/or playing a variety of instruments.

The story of El Sistema Nacional, therefore, offers a narrative that may entice donors and funding agencies to invest in a similar program in Canadian communities although the reality of the programs origins is often glossed over or misrepresented. Nevertheless, the Canadian and Argentinian programs listed on the Sistema Global page seemed to have found a way to provide music education to children in underserved communities, and while these goals and missions align with these goals stated by Abreu, a closer deconstruction of these program illuminates that the means in which these programs achieve these goals differ among one another and from El Sistema Nacional, and the structure and contents of these programs diverge from the original model El Sistema Nacional, which was never a formalized method or system (Frega & Limongi, 2019b). Many of the music programs reviewed in this study seem to be considering the ethical dimensions of their program to find ways for their students to thrive individually and contribute to their community by curating their own music programs that diverge from the descriptions of El Sistema Nacional.

It seems clear that many communities have found success in aligning with El Sistema narrative or label, although there is often very little resemblance between programs and the original Venezuelan program. In short, programs in Canada and Argentina are finding their own method to realize the dream held by many. But continuing to reference the Venezuelan El Sistema program without defining a method or acknowledge the lack of evidence to support this narrative, we are perhaps causing harm to music education. Perhaps the Venezuelan program should no longer remain the frame of reference for this movement to create universal access to learn to play an instrument. Rather, the network or system of programs should be facilitated to grow a variety of proficient and creative musicians capable of contributing to their desired culture(s). This involves dynamic teacher education programs that incorporate ethical dimensions of music education as well as robust infrastructures to allow for the time and physical resources to realize culturally appropriate, safe and engaging music education opportunities. Furthermore, as we strive to build educational opportunities based on evidence, the lack of evidence from Venezuela would suggest that relating to this one program is ill advised.

El Sistema Nacional provided a narrative that captivated the globe, but educators must also consider the ethical dimensions including the ways the students will use their musical knowledge and skills to enhance their lives and lives of those around them provided by sound-based research. To provide an instrument and sit together is simply not enough to help people and societies. "Mindfulness of the ethical

dimensions of school music is thus part of the specialized knowledge needed if music teachers are to most fully meet the ethical commitments of teaching as a true helping profession" (Regelski, 2012, p. 463). A different music education system is needed.

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Irish Fiddle and Western Classical Violin Tone: Acoustical Differences and Expert Listener Perceptions

John M. Geringer¹, Kasia Bugai¹, Katie A. Geringer²

¹College of Music, Florida State University, USA

² Private Studio Teacher, Houston, TX, USA

Abstract

We compared examples of Irish fiddle performances with Western classical violin performances, particularly regarding aspects of tone. We investigated acoustical differences as well as how expert listeners would describe differences in the sound and style between the two performance traditions. We asked an experienced professional performer in both styles to record fast and slow tempo examples using the same violin, the same approximate loudness levels, and the same room, equipment, and settings for the recordings. Results of acoustical analyses revealed several differences. Both classical examples revealed average spectral centroids higher in frequency than corresponding Irish examples. Further, classical examples demonstrated a higher harmonic to noise ratio, more use and extent of vibrato, more disjunct intervals in melodies, less ornamentation and fewer double stops. Four music faculty member listeners described the classical examples as resonant, open, even, clear, ringing, and brighter. Tone quality in the Irish examples was characterized as more varied, metallic, gritty, brash, sparkling, warm, and full-bodied. These listeners identified contrasts in the use of vibrato, ornamentation, articulation, bowing, accents and dynamics. Implications for music listening instruction are discussed. We suggest that teachers prepare students to listen by focusing attention within specific contexts to help them describe important elements and attributes of music and thereby enhance the meaningfulness of the listening experience

Keywords: Irish fiddle, tone quality, listener perception.

Introduction – background and aim

Music listening is an essential component of virtually all activity involving music. Listening in various forms is incorporated in performance, music appreciation, ear training, general music and so on. Recent widespread use of mobile devices and digital

means for listening suggests that listeners today are avid consumers of music outside of music classrooms (Williams et al., 2019). Continued study of listening seems important to better understand students' musical interests both in and out of school (Brittin, 2014).

Madsen and Geringer (2000/01) proposed a model for approaching the process of listening that included emphases on focus of attention, emotion, and discrimination nested within a cultural context. This line of research (see Madsen & Geringer, 2008) indicates that focus of attention is perhaps the most important attribute of actively participating in *meaningful* music listening.

Additional investigation has revealed that although students are often unable to verbally describe music they hear, they are capable of discriminating even slight differences (e.g., Flowers, 1983, 1984; Madsen & Geringer, 2000/01; Price, 1983). Further, listeners often show an apparent absence of awareness if not cued to a specific attribute (Madsen et al., 2007). We designed the present research to investigate how listeners would describe differences between two contrasting violin performance styles, Western classical violin and Irish fiddle. Further, we analyzed musical and acoustical features of the two styles.

The Western classical violin and the Irish fiddling tradition use similar instruments. However, performance traditions and characteristics make these two art forms markedly different including the general approach to skill acquisition and the overall stylistic elements that separate one art form from the other. The transfer of skill and knowledge in traditional Irish fiddle music, such as repertoire, is generally aural and thus undergoes change with time; the artform is repertoire driven (Flanagan, 2019). In the classical violin tradition the transfer of skill and technique is generally a master-apprentice process, documented by pedagogical treatises, and supported by a large body of composed performance repertoire. Where in traditional Irish fiddle performance practice varying approaches are considered a mark of the performer's style, in the classical tradition conforming to the written page is considered of high performance value. Classically-trained violinists often devote a significant amount of time to develop technique. In contrast, Irish players do not use extended techniques; they often play the instrument as they were taught, and achieve results with a different set of priorities than Western classical music (Cranitch, 2005; Flanagan, 2019).

Tone is another area where the classical and traditional Irish styles diverge. Classical violinists devote time and effort towards cultivating a tone that can be described as clear, pure and resonant. Tone is also important in traditional fiddling as

it is a stylistic determinant in fiddle styles. Tone quality is even used as “a measure of the *traditionalness* of fiddle players, as fiddlers who use vibrato in order to attain a more polished tone are generally criticized for playing in a manner alien to the tradition” (McCullough, 1977, p. 91). Conversely, classical violinists devote considerable time to developing a continuous vibrato of varying speeds and widths. In Irish music the underlying melodic material relies for much of its effect on the ornamentation of the melodic line; players use a variety of right- and left-hand approaches to augment the rhythm of the tunes (Cranitch, 2005; Flanagan, 2019).

To ascertain how listeners might describe differences between Irish fiddle and Western classical violin, we asked four expert listeners to describe differences in the sound and performance styles particularly regarding tone. We also analyzed multiple acoustical and salient musical features of the examples.

Method

We asked an experienced performer in both styles to record examples of each using the same violin, approximately the same overall loudness levels, in the same room, and with the same equipment and settings for the recordings in order to facilitate control over acoustical parameters. The performer holds a Master’s degree in traditional Irish performance from the University of Limerick, and a performance certificate and undergraduate degree from a large college of music in the southeastern United States. She is an active performer professionally in both Irish fiddle and classical violin styles, and in her private studio provides lessons in both styles. We asked her to select and perform one example each of fast and slow tempo excerpts representative of the two performance traditions. All examples were approximately 15 seconds in duration: The fast classical example was the beginning of the *Gigue* (from Bach’s *Partita No. 2 in d-minor* BWV1004), which was compared to an excerpt of a fast Irish example, *The Windmill* (a traditional Irish Reel). The slow classical example was the beginning of *Méditation* (from Massenet’s *Thaïs*) and was compared to the Irish Air, *Lament for Owen Roe O’Neill* (based on a Turlough O’Carolan melody).

We compared various musical features and relevant acoustical parameters of the Irish and Western classical examples. We used Praat (Boersma & Weenink, 2019) to analyze spectral centroids, harmonic to noise ratios, and vibrato rates and widths. We used Tony (Mauch et al., 2015) to analyze intonation. Additional musical features were

also contrasted: melodic contour and range, dynamic range, meter, ornamentation, and double stops.

In order to ascertain how musicians might characterize differences and similarities between the two performance styles, we asked four expert listeners, all of whom hold doctoral degrees in music. Two are experienced violinists and string teachers, and two are academic music faculty members. They were asked to listen to each pair of slow and fast excerpts as many times as desired and to describe the differences and similarities between the two examples within each pair, particularly as it relates to tone, and to describe the salient musical features of the examples.

Results

Results of acoustical analyses revealed differences between the two styles (see Tables 1 and 2). In comparing aspects of tone, both classical examples showed average spectral centroids (1459 Hz and 1271 Hz respectively for slow and fast excerpts) higher in frequency than corresponding Irish examples (917 Hz and 1020 Hz, respectively). This indicates greater overall energy in higher harmonics for the classical examples and results also from a higher tessitura compared to corresponding Irish excerpts. Higher centroids generally are associated perceptually with a brighter tonal quality. Additionally, classical examples demonstrated a greater harmonic to noise ratio (19.8 dB and 15.8 dB) than in the corresponding Irish examples (18.1 dB and 13.4 dB).

Characteristic	Slow Classical (<i>Méditation</i>)		Slow Irish (<i>Lament</i>)	
Spectral Center of Gravity	$M = 1459$ Hz	$SD = 1049$ Hz	$M = 917$	$SD = 67$ Hz
Harmonic to Noise Ratio	$M = 19.8$ dB	$SD = 5.8$ dB	$M = 18.1$ dB	$SD = 8.4$ dB
Intonation (range re: Eq. T.)	-5 cents to +10 cents		-7 cents to -10 cents	
Vibrato	Rate $M = 6.04$ Hz, Width $M = 40$ cents		Minimal (M width = 8 cents)	
Range (Melodic)	A_4 to D_6 (P 11 th)		A_3 to C_5 (M 10 th)	
(Dynamic)	24.9 dB		25.5 dB	
Melodic Contour	Disjunct, some Scalar		Conjunct, Scalar	
Meter	4 / 4		Unmetered	
Ornaments (frequency)	None		8	
Double Stops (frequency)	None		4	

Table 1. Acoustical and musical characteristics of slow examples.

Characteristic	Fast Classical (Bach <i>d-minor Gigue</i>)		Fast Irish (<i>The Windmill -Reel</i>)	
Spectral Center of Gravity	$M = 1271\text{Hz}$	$SD = 1152\text{ Hz}$	$M = 1020$	$SD = 1189\text{ Hz}$
Harmonic to Noise Ratio	$M = 15.8\text{ dB}$	$SD = 8.9\text{ dB}$	$M = 13.4\text{ dB}$	$SD = 6.3\text{ dB}$
Intonation (range re: Eq. T.)	-10 cents to +11 cents		-7 cents to + 8 cents	
Vibrato	Rate $M = 6.74\text{ Hz}$, Width $M = 33$ cents		None	
Range (Melodic)	A_3 to A_5 (2 octave)		A_3 to A_5 (2 octave)	
(Dynamic)	23.8 dB		27.0 dB	
Melodic Contour	Disjunct and Scalar		Disjunct and Scalar	
Meter	12 / 8		4 / 4	
Ornaments (frequency)	None		6	
Double Stops (frequency)	1		8	

Table 2. Acoustical and musical characteristics of fast examples.

These data demonstrate that more acoustic energy was focused on periodic (harmonic energy related to the fundamental frequency) in the classical examples rather than aperiodic waveforms (resulting from slides between notes and noise from attacks, bow and fingerboard) present in the Irish excerpts. These two aspects of tone quality can be seen in Figure 1 with the slow classical example (*Méditation*) in the top half and the slow Irish excerpt (*Lament*) below. Harmonic energy extends higher in the spectrum for the classical excerpt. Both classical examples included more use and extent of vibrato (illustrated also in the figure). Vibrato was present in both classical examples (mean rates were 6.04 Hz and 6.74 Hz in the slow and fast examples, mean widths were 40 and 30 cents wide respectively). Vibrato was minimal in both the Irish examples: not detected in the fast example, and little frequency variation but some amplitude modulation (rate of approximately 4 – 5 Hz) was present in the slow example. Pitch deviations were minimal and did not differ between the two styles or tempi, all notes were performed between -10 and +11 cents relative to equal temperament. The melodic range and tessitura used in the fast examples were the same (A_3 to A_5), however, in the slow examples the classical excerpt (A_4 to D_6) was approximately one octave higher than the Irish selection (A_3 to C_5). This difference in pitch height accounts for some of the difference in spectral centroids between these two examples. The melodic material was also in contrast.

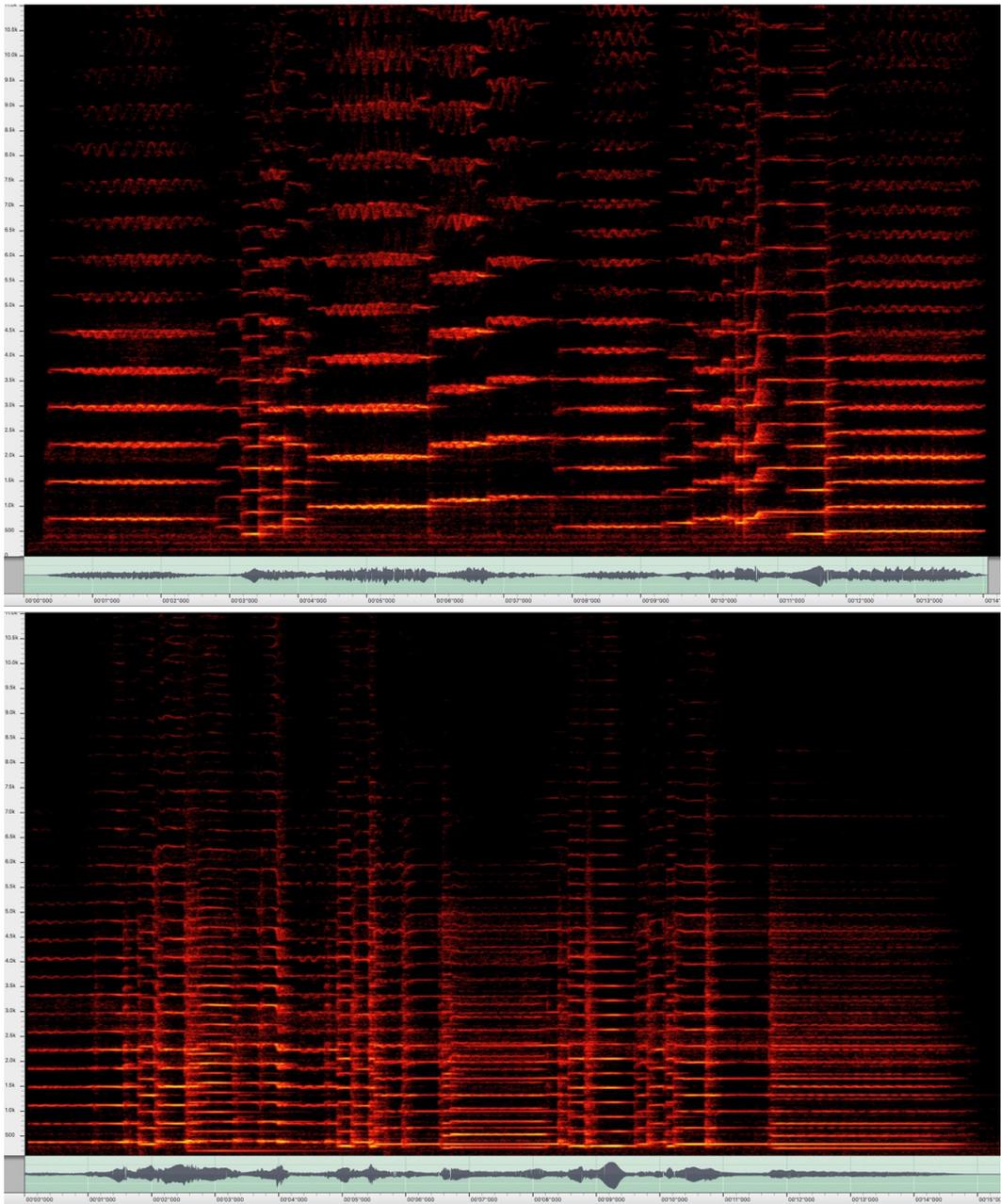


Figure 1. Sonogram (range 0 - 11kHz) of Western classical violin (top) and Irish Fiddle (bottom).

The two classical excerpts were more disjunct with large intervallic leaps as opposed to the more scalar and smaller intervals predominant in the Irish examples.

Ornamentation and double stops were prevalent in both the fast and slow tempo Irish examples, and minimal in the classical excerpts. The Irish recordings made frequent use of ornamentation known as *cuts* and *rolls*. One other difference in rhythmic organization was found. Although three of the examples were performed in traditional meter (4/4 and 12/8), the Irish *Lament* was performed unmetred, which is typical of Irish Laments.

The four musician experts' comments and observations can be summarized as follows. Regarding aspects of tone, the classical examples were described as resonant, open, even, clear, ringing, brighter, and thinner in the upper tessitura. Tone quality in the Irish examples was characterized as more varied, metallic, gritty, brash, sparkling, warm, darker, and full-bodied with a vocal quality. These listeners described contrasts in the use of tempo, vibrato, double stops, articulation, and ornamentation that were consistent with the analysis of these elements presented in the tables above.

Specifically, a number of comments concerned differences in bowing, accents and dynamics. Irish examples were described as more articulated and more accented with obvious bow changes and more variations in dynamics as well as folk-like and dance-like. Further comments regarding Irish performances indicated more slides into notes, more percussive attacks, multiple tones simultaneously, multiple types of ornaments that were heard as decorative rather than as part of the melodic line, and audible sounds of fingers on the fingerboard.

Summary and Discussion

One of the reasons we initiated this investigation was our informal observation that the tone quality in the two styles has different attributes. The difficulty in comparing the sound empirically between different performance styles is that contextual variables are myriad: performer, instrument, lack of constants in compositional elements (such as tessitura), hall, recording equipment, and so on, all of which affect tone. We attempted some degree of control by recording a single performer proficient in both styles and attempting to hold other variables as constant as possible, including the same instrument, room, and recording equipment. To assess differences in tone, we asked four expert listeners who did not know the nature of our research to describe what they heard, particularly regarding tonal aspects. We also analyzed relevant

acoustic variables. Classical examples revealed a spectral center higher in frequency than corresponding Irish examples, a general indication of brighter timbre. More of the total sound energy was focused on periodic (harmonic) energy and vibrato was much more present in the classical excerpts. Some differences in sound primarily result from the compositions themselves, with the important exception of the extensive ornamentation used by the performer in the two Irish excerpts, as well as obvious bow accents in a number of attacks. The expert listener comments generally reflected the acoustical differences found in tone. Clearly, when asked to attend to tone, these listeners were able to not only discriminate but were accurate in their descriptions of tone quality differences. Further, their comments described differences in ornamentation, bowing, accents and dynamics. Irish examples were depicted as more articulated and accented with obvious bow changes and more variations in dynamics. These observations are consistent with what have been labeled as the four main elements of Irish style by traditional Irish musicians (McCullough¹⁹⁷⁷): ornamentation, variation in melodic and rhythmic patterns, phrasing, and articulation.

The expert musician listeners were able to identify tonal differences in the styles despite the relatively short duration of the examples (approximately 15 seconds). Research in music that involves judgments of performance typically asks evaluators to listen for somewhat brief periods. Wapnick et al. (2005) cited a number of investigations wherein excerpts were presented for one to three minutes, many with stimulus durations of less than a minute. Geringer and Johnson (2007) found only slight variations in music major listener judgments between performances of short, medium, and longer durations of approximately 12, 25, and 50 seconds, respectively. Present results also correspond to research across multiple disciplines demonstrating that extremely brief slices of time can provide a picture approximating that found with a longer view (Ambady & Rosenthal, 1993; Gladwell, 2005), particularly when observed by experts. The judgment itself may even occur before specific reasons or elements are identified. Such a conclusion is consistent with research indicating that knowledge may be present before the subject is actually aware of it, or can define it (Bechara et al., 1997; Wilson & Schooler, 1991).

In contrast, research with children and less experienced listeners (Flowers, 1983, 1984; Madsen & Geringer, 2000/01) has indicated that although they are capable of discriminating even subtle differences, they are often unable to verbally identify the musical features heard. Madsen et al. (2007) noted such listeners are not able to verbalize or specify a specific attribute unless they are requested to *a priori*. We are

now engaged in a follow up study designed to ascertain whether music major students can make rapid discriminations between several violin styles, and to describe the types of salient musical features of the playing that led to that decision. We are interested in what these university music students will identify as distinguishing features of the styles given that we did not ask them to focus on particular musical features such as tonal aspects as in the present work.

Implications for instruction in the music classroom, however, seem consistent with the listening model proposed by Madsen and Geringer (2000/01). We suggest that teachers prepare students to listen by focusing their attention within specific cultural and musical contexts to help them describe important elements and attributes of music and thereby enhance the meaningfulness of the listening experience.

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Performing for or Collaborating with: Professional Classical Musicians' Reflections on Work in Community Engagement

Louise Godwin

RMIT University, Naarm (Melbourne), Australia

Abstract

The paper is concerned with music programs designed for diverse people or populations facing barriers to participation. While studies in the fields of community cultural development, community music and participatory artmaking have embraced the complex work of aligning various stakeholder interests and outcomes as part of the creative process of collaboration in such contexts, there is notably less discussion of this process through the lens of Western classical music community outreach and engagement. As such, this paper provides small insights into how conservatoire trained professional musicians perceive this process when employed in regional and remote touring with major performing arts companies in Australia. Particular attention is focused on activities involving *collaboration with* rather than *performance for* the communities they visit. My analytic focus on musicians' perspectives recognises the absence of their voices in institutional reports of the benefits of regional and remote touring, pointing to the potential for this gap to be filled through future research. The paper analyses the narratives of two mid-career musicians as case studies, gathered through in-depth research conversations as part of a larger doctoral study. Although numerous studies have identified such programs as a growing employment avenue for professional conservatoire trained musicians, less attention has been paid to the potential observations and insights that might be gathered through investigating musicians' perspectives. This paper makes a small contribution by reporting musicians' reflections on their experiences of community collaboration when employed as part of a regional touring company.

Keywords: community engagement, conservatoire trained musicians, collaboration.

Introduction

This short paper draws on the experiences of two musicians employed by major performing arts (MPA) companies² to deliver performances and community outreach activities as part of regional and remote touring programs in Australia. Listening to their stories exposed quiet indicators of moments where company interests fail to align with community interests. In amplifying these small and rarely acknowledged moments, I point to opportunities for deeper reflection on the delivery of these projects.

The positive benefits associated with regional touring are well evidenced in company reports. However, the narratives contained within such public reporting fail to nuance some of the inevitable complexities at play within creative *collaborations with* local communities when delivered as part of touring activities principally focused on *performing for* communities. This marks the ambiguities that exist within the relatively straightforward objective of delivering high quality Western classical music and opera productions to regional and remote communities, and the current somewhat under-defined activities of community outreach and engagement.

Background

In the face of fewer permanent employment opportunities within the Western classical music sector, conservatoire trained musicians' working lives are characterised by increased autonomy, tempered by precarity and isolation (Bartleet et al., 2012; Hennekam & Bennett, 2017). Alongside these changes, musicians may find increasing opportunities within the community or not-for-profit sectors (Beeching, 2012; Bennett, 2008, 2009; Bennet & Hennekam, 2018; Ondracek-Peterson, 2013; Throsby & Petetskaya, 2017; Tolmie, 2017). Meanwhile, scholars continue to question whether higher music education (Western classical music) is currently capable of preparing students to contribute within community (Bennett, 2008; Bull, 2015; Scharff, 2018;

² For the purpose of advocacy and public reporting, the MPA sector gathers as the Australian Major Performing Arts Group (AMPAG). AMPAG (2019) consists of 28 MPA companies, of which 14 are music-based organisations, including state symphony orchestras ($n = 7$), national chamber orchestras ($n = 2$), national classical concert presentation companies ($n = 1$), and state and national opera companies ($n = 4$). In 2018, these music-based organisations received 46%, or \$51million of the total MPA budget. The balance of \$78million was shared between 14 companies representing the other art forms: dance ($n = 5$), theatre ($n = 8$) and circus ($n = 1$).

Vaugeois, 2009), with Bennett (2008) arguing that “a total change of mindset” (p. 22) is required.

Aggravating these questions and complexities are problems associated with the blurred terminology used to describe work in this broad field. The absence of shared terminology around community-engaged arts practices manifests as an obstacle to this critical discourse in the space of both practice and research (see Lillie et al., 2020). While beyond the scope of this paper, it is worth pointing to the work of scholars such as Matarasso (2019), Turino (2009) and Goldbard (2006) to further this conversation. For now, this paper straddles the ambiguous terminology used by the Western classical music sector (e.g., community outreach, community engagement) and that used more widely in the creative and cultural sector (e.g., participatory art making, community music, community cultural development). As researcher, I wish to understand if conceiving community outreach and engagement through the lens of collaborative praxis might assist in the complex processes of aligning interests. This notion of “interests” follows Clare Land’s (2015) work in the space of Indigenous reconciliation, and her call to examine and reflect on the interests that motivate and drive work aimed toward social change.

Aim

This paper sits within a larger doctoral research study (Godwin, 2020) investigating the ways in which conservatoire trained musicians with portfolio careers narrate their diverse artistic activities in music. The study finds musicians crossing social and musical boundaries through their music making in community. This work, conceived as social action, enables the interpellation of musician’s socio-political values and beliefs. However, while these activities function as motivating forces in the shaping of musicians’ working lives, they also create tensions and instability. Across the constellation of artistic activities in which musicians engage, participatory music making activities within community are revealed as both loci of change and sites of struggle. Here, musicians must navigate the disjuncts between their individual socio-political beliefs and values, and the professional expectations associated with their identity as classical musician.

Context

In line with similar trends in America and Europe, peak Western classical music and performing arts institutions in Australia have, for some decades, developed programs and strategies to overcome barriers to access and participation in their art forms by communities distanced economically, socially or geographically. Today, some of these barriers are addressed through regional and remote touring, with much of this activity funded both by state government funding programs and as part of the Australian Government's arts funding and advisory body, the Australia Council for the Arts' Cultural Engagement Framework (Australia Council for the Arts, 2019). This framework is "a mechanism to ensure that the Australia Council's vision, priorities and processes recognise and reflect diversity" (¶2). In 2017-18, the Council invested \$30.2 million to fund arts in regional and remote areas of Australia. These projects focused on three categories of activity: "the creation of art with and by regional communities and artists, professional development for regional leaders, and the touring of diverse and excellent Australian work to regional audiences" (Australia Council for the Arts, 2018, p. 68). My paper is concerned with projects that fall under the third category.

Regional tours by MPA companies will likely involve performances for communities in large regional centres, small towns and remote communities. Opera Australia's 2018 Annual Report (2018), for example, describes the 2017 regional tour of Mozart's *The Marriage of Figaro* extending "far beyond traditional touring circuits, incorporating new destinations which would otherwise not have an opportunity to see a large scale, high calibre opera or theatre production" (p. 74) reaching in excess of 10,000 people. This tour also included opportunities for expanded community engagement and education through education workshops at performance venues and secondary schools and an invitation to children in each town to receive training to perform alongside the cast as members of the children's chorus. Opportunities for collaboration with local communities also feature on the tour schedule, with activities including workshops, and creative collaborations with local musicians, including members of Aboriginal and Torres Strait Islander communities.

It is possible that aspects of this paper may come across as critical of the community outreach and engagement programs led by MPA companies in Australia. Rather, my intention is to create a small space for questions and provocations, and to strengthen the case to listen to practitioner-musicians' feedback. As is evidenced by

the wider study from which this paper is drawn, musicians are a vital and powerful force in the currents of change.

Approach

The empirical data presented in this short paper is drawn from my qualitative study of five mid-career conservatoire trained musicians in Australia who have built sustainable portfolio careers principally comprised of “situated” (Bartleet et al., 2019) performance related activities within music. This study explored the diversification of practices and genres that these situated activities encompassed, capturing insights into the values and beliefs that come into play in this work, and the reshaping of musician identity that occurs. The five musicians, aged between 35 and 42 years at the time of data generation, were purposefully selected (Patton, 2002) according to a set of criteria. One criterion ensured that all participants had involvement in artistic activities with individuals or communities facing barriers to social inclusion and participation. A limitation arose in the recruitment process which effected gender representation in the study (male = 1, female = 4). This is neither uncommon in qualitative research (Clandinin & Rosiek, 2007; Riessman, 2008) nor unexpected.

Data was generated through multiple in-depth research conversations, conceived as epistemic interviews (Kvale & Brinkmann, 2009) aimed toward creating a dialogic encounter. All research conversations were audio recorded, with verbatim transcriptions verified and validated by each participant. Four musicians participated in two face-to-face research conversations, with one electing to participate in one. The first research conversations lasted from 80–130 minutes, with second conversations between 30–60 minutes. I also invited participant feedback on drafts of results and discussions, and summaries of findings and contributions.

Introducing the musicians

The two musicians discussed in this paper, Stevie and Peter (both pseudonyms), sustain strong connections to the Australian Western classical music sector, working with symphony orchestras, opera companies, and baroque, classical and contemporary classical chamber ensembles. Stevie is the artistic director of a contemporary classical collective and also works in free improvisation, and electro-acoustic and experimental music. Her working life also includes a number of community-based music projects with diverse membership aimed at social action. Peter also works extensively as a

freelance musician and has numerous collaborative relationships within cross-over genres, including folk, jazz, experimental and mixed medias. He is the artistic director of a classical music festival and co-directs a chamber ensemble that presents diverse programs of classical and contemporary classical repertoire. This chamber ensemble also delivers inclusive participatory programs within diverse communities.

Peter and Stevie completed their undergraduate qualifications in Australia, each pursuing a Master of Music (performance) degree in the United States. The similarities in the profile of their working lives have been shaped by these educational experiences, with both identifying their postgraduate studies as a critical influence. For Stevie, this experience “changed everything.” She commenced with the goal of getting “a job in an orchestra,” and left having been exposed to “all sorts of stuff.” For Peter, immersive experiences in a community outreach program working within marginalised communities meant that “without meaning to, every step that I went away, I found myself doing community music activities.”

Peter: *Whose music?*

Peter is actively involved in leading activities in community, including programs tailored for children and adults facing profound barriers to inclusion. His approach is based in a philosophy of care, captured in a recurring theme in our conversation of “playing away from the music.” In our research conversations, Peter’s relationship with the notated score became a metaphor for two competing expectations. First, his obligation to comply with the expectations and standards of excellence as professional classical musician and, second, his responsibility to meet the needs of those with whom he is working. He described this as the process of switching between “being a carer and facilitator and musician” and “being that polished performer.” For Peter, the negotiation of these competing expectations is mediated by a disposition of “care”, “love” and an overarching desire to connect with others through the creation of music making experiences where everyone is “feeling the same thing.”

Exploring the tension resulting from these competing expectations, Peter drew on his experience of remote touring with an MPA. As part of the outreach agenda, opportunities will be found for touring musicians to collaborate with members of the local community. In one remote community, this involved collaborating with musicians from the local Aboriginal community. Peter told me:

The idea was that the orchestra, which is seven of us or so, we would just improvise with whoever would come along. If they had charts, then we would do it. If not, we would make it up. Whatever it was, we would just have a bit of a jam. It was trying to make it as low-key as possible.

In this instance, the company had planned that the collaboration would result in a pre-concert performance prior to the company performance. Peter recalled that “a couple of musicians pulled out; and then a couple of them rehearsed with us and were too nervous” to perform. He reflected that he and his colleagues were:

...sad because we wanted everyone to feel as comfortable as possible; but at the same time, we don't want them to be uncomfortable, doing something that they don't want to do.

As Peter reflected on the discomfort experienced by some of the Aboriginal musicians, he told me, that while it was “lucky” that a lot of the local Aboriginal community came to the performance in the evening, “I am sure to them, this ‘opera thing’ that was coming to town, was for the white people, to listen to white people music.”

Within this brief example, numerous tensions resonate. First, the imperative of compliance with company funding and acquittal requirements can be heard in Peter’s recognition that it was ‘lucky’ that a lot of the Aboriginal community came to the performance. However, his engagement with the deeper complexities are exposed in his quiet recognition of the misalignment of interests. While the company interests require the presence and participation of First Nations’ peoples, this is contingent upon a persistent colonial narrative. As Peter suggests, this music is *our* music, not *their* music. The context, setting and performance outcomes reflect the Western paradigm of music making rather than the Indigenous perspective on the role of music in the cultural life of community. Recognising that such difficult conversations need to be had, Peter told me that he believed we need to get “to a point where that communication can be open enough to say, ‘What is this that we are doing?’” However, this simple question is, he acknowledges, “a challenging one ... at the end of the day, [the company] had employed us.”

Stevie: *We did it together*

Stevie's musician identity is entwined with her social identity as an outspoken, courageous, "queer woman in classical music." Her approach to music making is characterised by "truthfulness", "honesty", "freedom" and "integrity" as she seeks to resist socially constructed norms. In sharing her experience with a regional tour presented by an MPA company, Stevie recalled arriving in a remote town with "absolutely no plans" other than the company's suggestion that "maybe the orchestra might do something" with some local musicians. She described how "people turned up with their guitars and no charts." The conductor simply said, "Play me that," and then wrote out chord charts. Stevie recalled that the ensemble "just developed backing tracks to go with their song. We did it together as a group; it was very organic."

The company arranged for the performance to be streamed out to remote communities. Stevie recalled that the local Aboriginal musicians "became instant rock stars" in this process of "actual collaboration. You have created something here." Reflecting on these words, Stevie shared the experience of being recognised by one of the Aboriginal musicians the next day:

We were then instantly part of his world for that brief period of time...we listened to his song; we had written music to go with the song; and we performed it together. And that gave that power...we were listening and engaging; that was beautiful; it was so good. And it took a two-hour session to write all those things...How hard is that?

Stevie described a subsequent year of the tour in which the collaboration became more "curated." The company engaged a composer to arrange the songs, and Stevie recalled arriving in town:

It was like, 'Oh, this is a cultural moment.' There were people there with cameras and there was a totally different vibe...You know when you turn up to a collaboration and there is a film crew there. You are like, 'Okay, well, yes, this is a thing that's good and it's what should be done. But can we work this?' (Laughs). You know, you get there and there's an expectation.

Stevie's two contrasting experiences touch on the very subtle but critical moments where company interests fail to align with community interests. She

described two alternative perspectives on collaboration: one an authentic coming together of different musical voices and the other a meeting mediated by the curation of a composer. Both are legitimate models of collaboration. However, one looks inwards toward music as interrelational encounter, the other turns outwards using music as symbolic gesture. Alluding to this disjunct, Stevie reflected:

Every year all the musicians are like, 'we have got some suggestions' and [the company is] like, 'Yeah, interesting'. And it is so clearly a 'tick' box; and it goes back to all of this other stuff. They don't give a damn about the educational opportunity of instrumentalists and singers and musicians of the calibre going through these small towns. They just want a 'tick' box that 'they did a workshop'.

Concluding thoughts: What is this that we are doing?

There is an integrity in what that tour does. It is taking the "high arts" to places where they never get to go and to people – and particularly children – farmers, everybody, who never get to experience it on a regular basis...I think there is a real commitment to the arts and the longevity of the arts that is inherent in that, that is really special. I guess my thing with "integrity" is not so much about actually the process of going there. I think the process of going there is beautiful and really important. (Stevie)

As Stevie states in the preceding quote, the process of taking Western classical music and opera to regional and remote communities around Australia is an important activity aimed toward ensuring equity of access to different forms of cultural expression. However, as Stevie and Peter both suggest, there are important conversations that MPA companies delivering these programs are reluctant to enter. Instead, freelance musicians, recognising this reluctance, self-silence in recognition of their responsibility to sustain the status quo. As my doctoral study reveals, speaking back to power is an activity that is considered disruptive and professionally risk, particularly for musicians employed on precarious, short-term contracts. Musicians, instead, save their energies for the work that they do with their independent ensembles and collectives, seeking avenues to protest and act in support of change.

Meanwhile, compliance with government-funded activities requires measurable outcomes and acquittal processes, with this agenda inevitably driving the interests of

MPA companies. The activity of documenting audience numbers, engagement with different socio-cultural demographics, and evidencing benefits delivered to communities is a responsibility and an obligation. But at what point do these interests dominate the interests of the communities with whom they engage? To what extent are regional touring activities motivated by an interest in sustaining the historical case for the continued funding of their main stage activities? How many other critical questions are silenced?

The purpose of this paper has not been to entertain these contentious questions, but rather to point to the opportunity that is presented through these touring activities. As Peter and Stevie have both described, a collaborative and participatory approach to working in community is not a complex undertaking, but rather an easy adjunct to performance activities. With an intention to be flexible, adaptive, inclusive and open to whatever might happen is possible, conservatoire trained musicians have the skills, attributes and willingness to engage in such forms of creative collaboration. It's time to start listening to them.

Acknowledgement of land

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'Changing it up': A Maths Teacher's Understanding and Validation of a Primary Music Program

Martina Golding¹, Beth Rankin²

¹Arts and Education, Deakin University, Australia

²Creative Arts Education, Australian Catholic University, Australia

Abstract

Exploring the difference between two teachers' experience in their respective curriculum fields of mathematics and music provided an opportunity to challenge, provoke and potentially rethink how a music program could be re-invigorated for students in the upper primary school in Geelong Australia. The music teacher and the generalist with a mathematics specialism shared the events, processes and strategies of working with upper primary students as a way of examining their own lived experience as teachers and their perceptions of that experience. By engaging in a series of dialogues the two teachers were able to "explore questions of importance", create meanings without expectation of "objective truths" and "promote each other's contrasting views" (Sawyer & Norris, 2013, p. 23).

Keywords: difference, music-maths, upper primary.

Introduction - background and aim

The decision to undertake this inquiry emerged from the music teacher's perceived need to re-invigorate a melodic percussion program that had lapsed during her two-year leave of absence. The importance of instrumental music and playing as a 'team' is reflected in the new state curriculum and includes the requirement of playing instruments together (Victorian Curriculum, 2016).

When students are engaged and collectively immersed in active learning there is often a sense of enjoyable absorption or "meaningful coincidence" (Davidson, 2016). This can manifest in group music-making as enhanced synchronicity, social music interaction and musical meaning (Lesaffre et al., 2017). In educational research of participatory music ensembles there are calls for teachers to review the contextual

significance and the "situated nature" of learning in classroom music (Wallerstedt & Lindgren, 2016); "to better understand participatory values, ideas, practices, and pedagogy" (Thibeault, 2015, p. 7); to gain knowledge of how "children are socialized into collective musical practices" (Sawyer, 2006, p. 162) and to recognise the need for exemplary programs in which "both extrinsic and intrinsic benefits can be achieved through musical participation" (McFerran & Crooke, 2014, p. 145).

In the course of regular workplace discussions about the same group of upper primary students it was apparent to both teachers that there were significant differences in levels of engagement, learning and behaviour resulting from their approaches to teaching and curriculum content. The possibility of a dialogic collaboration with an experienced teacher from a different curriculum field was seen by the music teacher as an opportunity to interrogate, challenge and potentially re-invigorate the Melodic Music Program. As the nature of the research design was duoethnographic, dialoguing with a teacher potentially on the same wavelength, using the same arts-based language might not provide a context for critical self-analysis. Engaging in dialogue with a teacher from a different philosophical, pedagogical and discipline background provided the tension required to properly interrogate the program. Consequently a generalist classroom teacher experienced in upper primary teaching, with a focus and leadership in the discipline of mathematics was approached to be a participant observer in the study.

Understanding the context of music education in Australian primary schools and specifically the use of instruments has relevance for the melodic percussion program that was used to situate this duoethnographic study. An Australian national report (Pascoe et al., 2005) revealed that the provision of music education in government primary schools has been in decline for years. Music education was described as approaching a "crisis stage", being in "a serious deficit" and a "social justice" issue (Lierse, 1998, p. 240; see also, Brasche & Thorn, 2016). It was noted that instrumental tuition in Australian schools was typically only available as a co-curricula option for those individuals who could afford it. Very few instrumental programs were part of the music program within the school curriculum. More recently a Victorian Parliamentary Inquiry into Music in Schools (Parliament of Victoria, 2013) noted that "instrumental music does not need to be confined to the co-curriculum in primary schools...and (there is) ample opportunity for schools to incorporate instruments into classroom music programs" (p. 114). Subsequently the Victorian Curriculum (2016) has set out expectations for all students in primary school to achieve standards in

music, which in the upper primary school includes playing and performing collaboratively with instruments.

The music program at the primary school in Geelong, where this study took place, draws on the pedagogical approaches of Kodály and Orff Schulwerk (Göktürk, 2012; Giddens, 1993). These approaches to music education are prevalent in music curriculum across government and independent schools (Göktürk, 2012; Taylor, 2012). They share many attributes such as emphasis on sound before symbol, sequential enjoyable, play-based experiences and elemental music, drawing on simple musical structures that build in complexity. They prioritise active music-making and share a belief that all children are innately musical. Kodály emphasised singing and the use of sol-fa with hand-signs and a moveable doh. Together with rhythm syllables and development of inner hearing, this approach has been found effective in fostering audiation and music literacy (DeVries, 2001). The Orff approach combines speech with movement and dance and places emphasis on improvisation. The advantage of this approach is the opportunity for children to be creative through elemental music-making. Elemental music-making is the notion of "active and creative music practice for everybody" (Salmon, 2010, p. 12) that enables each participant to interact with the music at their individual level of capability yet synchronously with other participants.

Methodology

Duoethnography is a fresh approach to research in education that embodies respect for differences in our teaching and understanding of integrated approaches. This methodology was chosen for its "participatory and emancipatory intentions" (Norris et al., 2012, p. 10). As participants we acknowledge that our research is practical, "our inquiry is our action in the service of human flourishing" (Heron & Reason, 1997, p. 11). As well as "participatory and emancipatory intentions" (Norris et al., 2012, p. 10) both teachers were driven by finding practical ways to improve outcomes for upper primary students.

In duoethnography the researchers are the participants and also the 'site' of the research. While there is equal status between the voices, one of the participant researchers (Sandra) has an expanded voice due to the significance of the music program in the overall study. In this study Sandra represents the voice of the music teacher and Robert represents her colleague, an experienced generalist teacher with expertise in mathematics (see Figure 1). An implication of expanded voice is place-

based meaning such as personal history, pedagogical spaces, cultural, political and geographic spaces which are part of the inquiry as they contribute to "interactions, conversations and transactions leading to mutual change" (Sawyer & Norris, 2013, p. 19).

To understand complex phenomena of their situated practice both teachers engaged in narrative through intuitive, discursive and reflective means while accepting normality and anomaly, harmony and dissonance, agreement and variance. They employed "the ethics of self-accountability" (Miller, 2011, as cited in Sawyer & Norris, 2016, p. 11) by engaging in critical inquiry and "examining the relationship of self to practice" through a dialogic lens that challenges currently accepted norms and market-driven values in education. By employing reflective self-consciousness through dialogue they gained understanding of how they came to know the social reality under scrutiny. Each perspective was "refracted through the story of the other, promoting new perceptions and a sense of praxis, the imagining of alternate versions of self and work" (Miller, 2011, in Sawyer & Liggett, 2012, p. 629). Gouzouasis et al. (2014) emphasised "the importance of including teachers as dialogic partners in the enterprise of music education research" (p. 3).

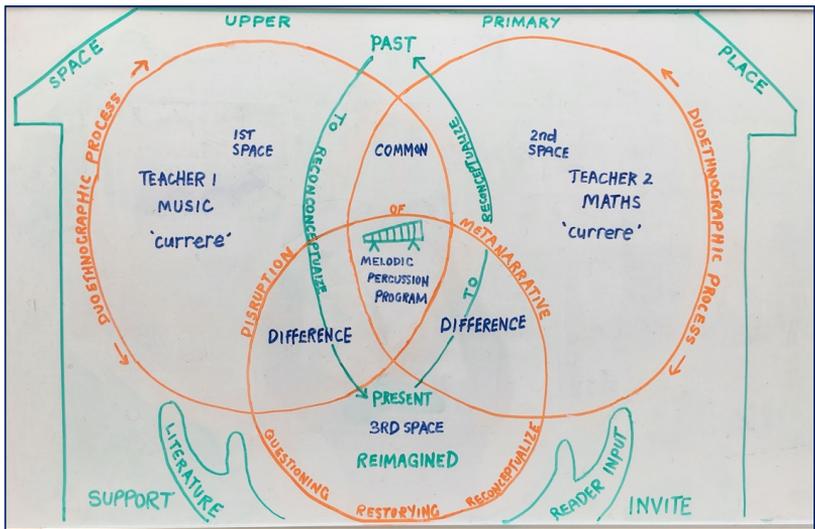


Figure 1. Duoethnography mind map. The process of two voices from distinct curriculum fields, mathematics and music in dialogic transaction with each other.

Procedures

Four dialogues of approximately an hour took place over a series of four weeks and were held in a meeting room at the school (Figure 2). There were also observations of one another's classes. Transcription of the dialogues in the initial phase of data analysis was followed by the sorting of constructs and review of reflective notes and daily journaling. Reflective notes capture immediate thoughts and feelings while journaling facilitated the exploration of the two teachers' ways of knowing and thinking, occasionally leading to decentering of dominant discourses and revealing bias or assumptions. Through analysis of the narrative data, seven key themes emerged which are presented and discussed.

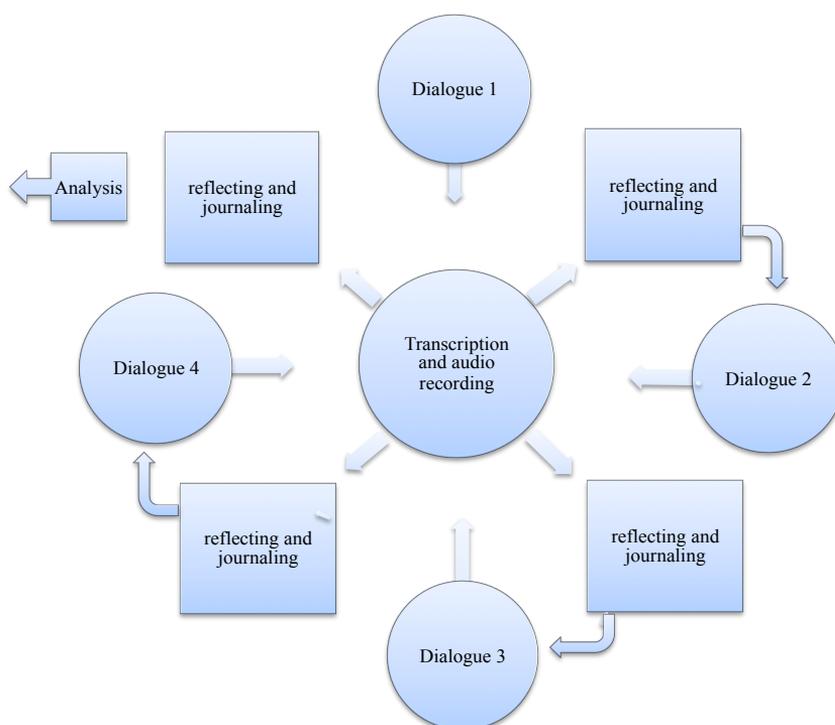


Figure 2. Four dialogues of approximately an hour took place over a series of four weeks as well as observations of one another's classes.

The transcribed dialogues elicited numerous constructs that were reviewed along with reflective notes and journal entries. Reflective notes captured immediate thoughts and feelings whilst journaling facilitated the exploration of the two teachers' ways of knowing and thinking, often leading to decentering of dominant discourses and revealing bias or assumptions. For example the assumption by the music teacher that a lack of confidence was only an issue in music and not in mathematics was challenged during the first dialogue with the mathematics teacher.

Following initial coding of the data set "in vivo" coding was employed to make use of "the direct language of participants" (Saldaña, 2013, p. 100) as opposed to researcher generated words and phrases. Coding should be "accompanied with careful reading and re-reading of...data as your subconscious, not just your coding system, develops connections that lead to flashes of insight" (DeWalt & DeWalt, as cited in Saldaña, 2013, p. 60). In vivo coding also enabled the music teacher to distance her "self" as researcher from her "self" as participant, with the benefit of extracting meaning in a more impartial way. To understand the narrative data over time, the transcribed dialogues from one to four were colour coded and set out in themes on a data wall. Thus adjacent to each emergent theme an evolution in participants' thinking about what they had communicated, became clearer.

Discussion-findings

In the quest to re-invigorate the Melodic Percussion Program, the duoethnographic process elicited differences between the mathematics and music teacher, provoked lively dialogue and supplied a purposeful vehicle for change. Emergent themes provided insight into practices related to this program and shed light on issues that were previously not apparent. The themes of Confidence; Success; Participatory Experiences; Talent; Social Learning; and Diversity are discussed under each of these findings.

Confidence

Confidence was a construct invariably linked to students finding "their comfort level". The students were immersed in a new piece that they had learnt when Robert came to collect them. Upon reflection later that day he noted: "Well I didn't see anyone looking uncomfortable, not at all" to which Sandra mused: "they find their own, you know what I mean they find their comfort level". In the MPP a "comfort level" is achieved

through multi-sensorial engagement ahead of the instruments. Multi-sensorial engagement brings together listening, singing, miming, visual and kinaesthetic patterning that facilitates effortless extension onto the instruments. The interaction of embodied experience with aural kinaesthetic preparation ahead of instrumental playing is supported in research of “sensorimotor-coupling” (Chirico et al., 2015).

Success

The notion of “success” was linked to positive learning experiences in small meaningful steps. Both teachers found that scaffolded learning enabled students to experience success which is important for creating an environment that is enjoyable, motivating and empowering. Robert described this process in his observation of the MPP “You do very simple notes to start with and it just builds up their confidence...I could tell by the looks on their faces they were so proud playing their tune today”. Robert also noted the accessibility of the MPP “well, it is catchy and it’s achievable, because they’re playing it aren’t they; that was very successful.” He noted the attendance of a student who had communicated that he was coming just to attend the MPP “you know the comment from that child there that only came so he could have that lesson is pretty good for a Grade 5 boy”.

Participatory experience

Shared participatory experience is the foundation of music learning and is philosophically located within the Participatory Inquiry Paradigm (Heron & Reason, 1997). Participatory performance is characterised by immersion in music-making for enjoyment in a social context (Turino, 2008) as in contrast to “presentational performance” which emphasises the performance or the product and is about “hierarchy, competition, (and) financial achievement”(Buchan, 2016, p. 38). Amongst music educators there’s a great deal of rhetoric about the value of participation in music and yet “presentational” music continues to be the “default setting” in most schools (Buchan, 2016; Regelski, 2013).

An unexpected correlation with sport emerged during the first dialogue which is not surprising given the experiential nature of both sport and music as well as the prominence of Australia’s sporting culture. In reference to music Sandra asked “can we enjoy it just for the participatory element and enjoyment factor?”, Robert

responded "yeah like sport! you might never be a great sportsman but you might like a bit cricket or footy or whatever..."

Talent

A self-perceived lack of talent may be a barrier to participation (Kellett, 2016) and has led to widespread acceptance of the "talent myth" (Scripp et al., 2013). The notion of a "talented few" has set up a disjunction between "talented/untalented ... musical/unmusical" (Thibeault, 2015, p. 59) with a consequence of inequity "in the provision of instrumental music education" (Van de Geer, 2008, p. 9). This has resulted in a "legitimation crisis" in institutions that use it to justify elitist agendas (Regelski, 2013, p. 18) and it has in turn contributed to many in our community being musically disenfranchised (Johnson & Eason, 2016; Buchan, 2016; Garrett, 2014). In the case of teachers' lack of confidence to teach music (Pascoe et al., 2005) research indicates that "it might be helpful to distance the teaching of music from the idea of musical talent, connecting it instead with the notion that all teachers can be capable of doing this if they 'have a go'" (Garrett, 2014, p. 191).

Sandra was reminded of how prevalent and disempowering the concept of talent can be with her colleague's comment "See I love music, but I haven't got musical talent ...". The notion of talent has become a disabling mindset for many in current Western cultures. In the current celebrity culture the obsession with "talent" has infected schools, with the result that "many students are labelled early in their academic life as being innately talented, whereas other children perceive this to mean they are not" (Cogdill, 2015, p. 5). School administrators are accepting the talent myth that "music learning should be concerned with identifying 'talented' individuals rather than developing school cultures that value and celebrate community and participation" (Buchan, 2016, p. 39).

Social learning

Students in the upper primary school are at a unique stage in their social development which has implications for how you teach. As Robert explained "you need to *change it up* in grade 6, you need to teach differently; do things differently...so you pull out some really interesting different ways of learning in third term that engages them". The social learning needs of the upper primary age cohort have been linked to neuroscience research and educators understand "that the adolescent brain is still

developing; sensorimotor stimulation creates stronger synaptic connections" (Wilson & Horch, 2002, p. 57). In their findings they recommend activities such as "playing music that links memory to specific learning tasks, and (using) rhythmic patterns (as) effective memory tools for learning" (p. 57). They advocate for inclusion of music activities that enhance team building and peer collaboration.

Motivation to participate in music ensembles has been linked to many non-music factors such as social, academic, and family reasons (Adderley et al., 2003) and the desire to be part of a team or music family (Parker, 2014). With group effort comes a sense of team sound "Musical ensembles...depend on the development of cohesion to achieve synergy in the form of an excellent sound and enjoyable performance" (Criss, 2010, p. 30).

Community of practice

The learning environment provided by both teacher participants is unique in that resources such as mathematics worksheets, visuals and games are essential in Robert's case, whilst Sandra employs singing, moving, modelled activities and instruments in the melodic percussion program. Students participate meaningfully in a pattern of behaviour that has evolved over time as members of a community of practice. Learning is "a process of becoming a member of a sustained community of practice" (Lave, 1991, p. 65). Tasks are undertaken and goals are agreed upon as information is shared in the mathematics context.

In a musical community of practice like the melodic percussion program there is meaningful participation "regardless of their level" (Sawyer, 2006, p. 163). Playing music as a whole grade places emphasis on students being a community, a music ensemble within the classroom. Sandra noted that "there's something about the group playing together, you know the team thing, grade 5-6s love to be a team whether its dancing or playing footy". Such programs are recognised in the Victorian Curriculum (2016). Under the heading of "music practices", performing involves "playing instruments...either as an individual or ensemble member" (Victorian Curriculum, 2016).

Diversity

Whole class music programs as an in-curricula option should meet the musical needs of diverse groups of students. In the melodic percussion program elements of

"universal design" (Darrow, 2010) are employed and include the instructional approach, the materials and the instruments. The flexible design of Orff-style instruments (with bar removal) enables students of all abilities to participate. These instruments utilise "gross motor playing skills rather than the more precise fine motor skills often associated with playing traditional orchestral instruments" (Buchan, 2012, p. 11). Application of strategies for improved music engagement include the use of multisensory experiences (visual, auditory, and kinesthetic) merged with adapted pedagogical processes (Orff and Kodály). Embodied learning ahead of the instruments gives students a chance to hear, vocalise and kinaesthetically rehearse parts and to "self-select" (Van de Geer, 2008, p. 6) the part that 'suits' them best.

Given the limited research of participatory instrumental music programs in upper primary school contexts, these seven themes provide a critical perspective through which the melodic percussion program could be viewed and be re-invigorated. The dialogic discourse has been employed because studies that don't have "critically reflective teacher pedagogy at the centre are unlikely to help children become life-long cultural producers who can do more than perpetuate the status quo" (Buchan, 2016, p. 239).

Conclusion - discussion

In the context of instrumental music it may be that the melodic percussion program is well suited to upper primary students especially if it meets their social needs while providing a sense of accomplishment, self-esteem and team belonging. At this stage of their psycho-social development, students need things to be done "differently", for their teachers to "change it up". By playing music with their peers "in generalised and effortless ways, children become socialised into the music and the music traditions of their own culture" (Lamont, 2016, p. 405). Greater understanding of the benefits afforded by such programs requires further research. There is a need for research that embraces a pluralist perspective emergent from the experiences of individuals and leads to improved social outcomes.

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Rubato in Ensemble Performances of *Yorkshire Ballad*: Where's the Beat?

Christopher M. Johnson¹, John M. Geringer², Melissa C. Brunkan³, Deborah Confredo⁴,
Kevin Weingarten⁵, Victoria Warnet²

¹Music Research Institute, University of Kansas, United States of America

²Center for Music Research, Florida State University, United States of America

³University of Oregon, United States of America

⁴Temple University, United States of America

⁵University of Washington, United States of America

Abstract

A previous study revealed consistent patterns of conductor rubato in *Yorkshire Ballad* that could be related to both the structure of the phrases as well as the overall structure of the composition. The purpose of this project was to determine if those same patterns existed in recorded ensemble performances that were created solely for the musical performance and not related to any research investigation. Forty-five recordings were obtained and screened for further analysis. Eleven of the most musical recordings were then selected for analysis and were found to have timing variability that approximated assumptions developed from the previous investigation. Results in this investigation extend the evidence that there seems a common practice for patterns in rhythmic variation that relate to the musical phrase, and further, this practice appears to extend to ensemble performances. Additional research in this area seems warranted.

Keywords: rubato, conducting, ensemble performance.

Introduction – background and aim

There is little doubt that the musical score is only a skeletal window into all the aspects that make a performance musical (Gabrielsson, 1974; Gabrielsson et al., 1983; Johnson, 1996b; Shaffer, 1981). Musical training develops students' ability to take the written score and transform it into sound that ideally evokes aesthetic experiences (Johnson, 1996a, Johnson et al., 2012a, 2012b; Palmer, 1989; Repp, 1996). Most detailed analyses of temporal variations in performances have been conducted using solo or prepared

instruments in order to facilitate analysis of beat note onsets (Johnson et al., 2012b). However, ensemble performances are still the main attraction at most concert venues (Repp, 1996, 1999; Shaffer, 1984). In particular, the question of whether tempo flow in an ensemble setting parallels that of soloists seems essential to understanding the musical aspects of rubato.

In the first project designed to examine tempo flow in an ensemble setting (Johnson & Geringer, 2018), volunteer participants from three levels of expertise were asked to learn and conduct the first 40 measures (10 phrases) of the *Yorkshire Ballad* by James Barnes. We used a unique software program, *Einsatz* (Kawaguchi, 2016), developed for studying conducting patterns. Participants' arm motions are detected by a Wii™ controller and used in real-time to control the tempo of an audio recording. Consequently, conductors controlled only the rhythmic flow/onset of each sequential beat. Participants conducted a series of practice trials and chose their most musical performance of the excerpt, which was analyzed to ascertain their timing tendencies. Results revealed consistent patterns in the conductors' rubato that could be related to both the structure of the phrases as well as the overall structure of the composition. We determined that analysis of the use of rubato in an ensemble setting could provide interesting relationships between these conducting performances and previous studies of solo performances. We speculated that findings may reveal whether rubato tendencies in group performances conform to common practice expectations noted in solo performances. Therefore, the purpose of this project was to determine if such patterns existed in ensemble performances that were created solely for the musical performance and not related to any research investigation.

Method

Stimulus selections

We were able to locate 45 different wind ensemble recordings of the *Yorkshire Ballad*, by James Barnes. Recordings consisted of both audio and audio/video recordings, many of which were available on YouTube.com. Included in the original total were performances by middle school, high school, college, and professional ensemble musicians. From these 45 recordings, three experienced wind band educators selected the 11 "most musical" performances. The index of agreement between the three adjudicators for the 11 selected was high, .88.

Procedure

The next step was to code the beat timing of the performances. Because this piece has many overlapping lines with slurred attacks, many of which occur at instances other than beat points, we used a somewhat novel technique to obtain the inter-onset intervals (IOI) of each beat of the first 160 beats of the piece (10 phrases consisting of eight “A section” phrases and two “B section” phrases, each of which contained four measures of four beats). To approximate an accurate coding of the beat points, we listened to each of the 11 performances multiple times until we could tap the performed beat notes in synchrony with the ensemble, as if we were members of the group. Each performance was tapped and recorded three times: twice by one of us, and a third time independently by another one of us. This procedure resulted in 33 tapping performances (11 ensembles each tapped 3 times) of the 160 beats, and allowed both intra- and inter-observer reliability to be calculated for each performance. The taps representing the points in time of each beat were then converted to IOI durations using a newly developed software program, *Taps*, created specifically for this project (Dunn, 2018). We tested observer reliability for each of the 11 performances using a series of repeated measures ANOVAs. We found no significant differences in IOI between repeated tapping performances of the same person and the independent observers for any of the ensembles, $F(2, 318) \leq 1.9, p \geq .14$. In eight of the 11 analyses, F -ratios were less than 1.0. For subsequent statistical analyses, we used composite values (*means*) of the three tapped performances to determine inter-onset values.

Results

Based on observations made in the previous study of conductors (Johnson & Geringer, 2018), we wanted to compare beat durations of the beginnings and endings of phrases with the middle measures of phrases. We first did this with the 11 performances identified as the most musical. In *Yorkshire Ballad*, each phrase consists of four measures with a total of 16 beats. We first compared the first and last measures (8 beats) with the middle two measures (8 beats) of all eight A section phrases. We found a significant difference in IOI between the phrases, $F(7, 224) = 13.06, p < .001, \eta^2_p = .29$, and a difference between the two beat positions, $F(1, 224) = 28.57, p < .001, \eta^2_p = .47$. There was not a significant interaction between phrases and position. Beat durations in phrase beginnings/endings ($M = 1.01$ s) were slightly but consistently longer than

durations in the middle of phrases, ($M = 0.99$ s). Differences between individual phrases and the 11 versions, although significant, were not our focus in this study, neither did they interact with position within phrases.

Analysis of the two B section phrases also resulted in a similar significant difference between beat note positions, $F(1, 22) = 21.90, p < .001, \eta^2_p = .49$. There were no differences between the two B phrases, or interactions with beat position. Once again, beat durations in phrase beginnings/endings ($M = 1.01$ s) were longer than durations in the middle of phrases, ($M = 0.99$ s). An illustration of these noted differences for three selected performances can be seen in Figure 1.

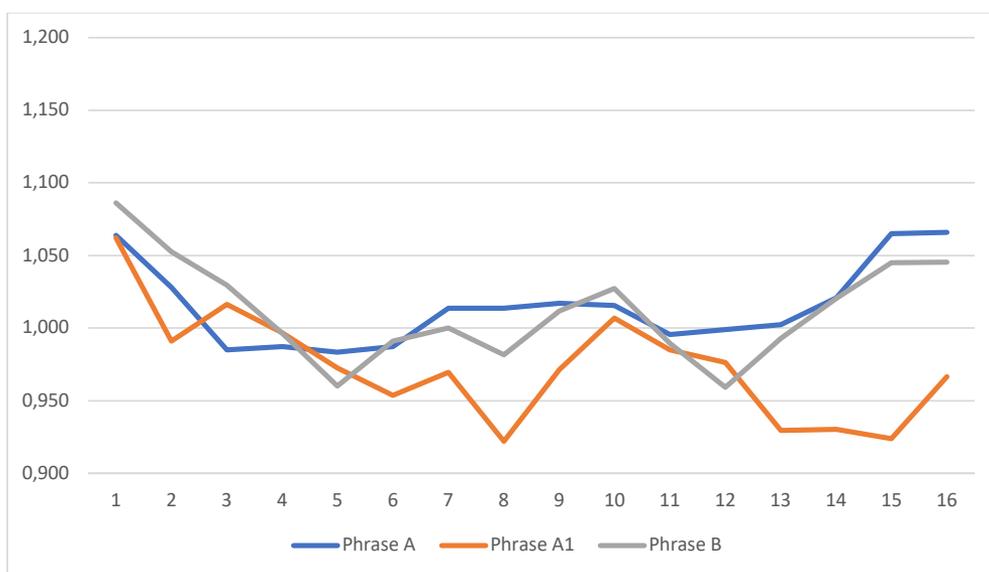


Figure 1. Mean note onset times for phrases A, A1, and B for the three selected performances.

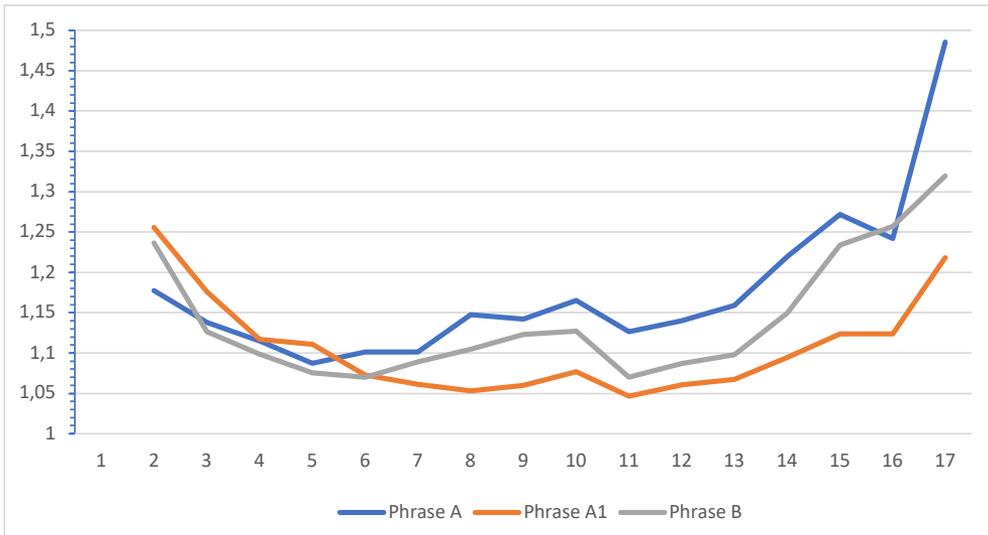


Figure 2. Mean note onset times for phrases A, A1, and B for the previously examined conductor performances.

Conclusion - discussion

Based on our personal observations, we believe that these results substantiate the conclusions made in the previous ensemble conducting investigation (Figure 2), which implies the presence of some generally agreed-upon common practice among group performances that appears to parallel the patterns noted in previous solo performances. This study is the second that investigates temporal patterns in musical performance within an ensemble context. Working with recorded performances that were created for artistic and not research purposes adds to the authenticity of a project, but also some logistical problems. When the sound waves from the recordings are put in a musical editor to determine onsets, one becomes immediately aware of how inexact group performances are. Determining the millisecond of an onset is impossible given the discrepancy between individuals and sections. It can be approximated, but when you go back and try to determine it again, that onset point can shift by several milliseconds in the second attempt. Our present solution was to listen carefully multiple times, learn the performance timings, and tap along as if performing with the ensemble, the activity appears to generate a more reliable set of onset times. We found this to be true not only within musicians, but also between them.

The parallels found between the eleven original recordings and the original solo performances is promising. Although the mean differences are not large, the small degree of deviation makes this difference in means musically important.

The overall figures illustrating the temporal changes in the performances paint similar pictures. While each performance is different, the similarities are marked. There are directional tendencies that are of different magnitudes, but parallel directions, seen primarily in the 16 beat points, but less in the center of the phrase, at the 8 beat points. There is also a slight change that appears to exist between the first and second sets of 64 beats. There is an IOI difference of 0.03 seconds per beat between these two parallel phrases. That was consistent among the performed as well as the recorded performances.

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Are *flatliners* an Issue when Measuring Aesthetic Experience with the CRDI?

Ramiro Limongi¹, Cecilia Murata²

¹Escuela Superior de Educación Artística en Música “Juan Pedro Esnaola”, Buenos Aires, Argentina

²Universidad Argentina de la Empresa, Buenos Aires, Argentina

Abstract

The *Continuous Response Digital Interface* (CRDI) has been extensively employed for measuring aesthetic responses to music. Some studies have included visual elements, complementing the listening experience, mainly reinforcing the effects of music. When considering a ballet production, both visual and auditory aspects, and its combination, are equally merged in this bisensory experience. However, as a complex stimulus, it could give rise to erratic results. For a subtler understanding, idiosyncratic responses, such as profiles with a minimal variability range, drawn as an almost flat line, become particularly relevant. Offering apparently no result, as an outcome of CRDI measurement, *flatlines* require analyzing attentional processes instead. Previous CRDI studies have addressed attentional issues, inquiring about possible competing focuses among the stimulus' features, as well as the effect of distractors, or the impact of manipulating CRDI dial on such an experience. As a multifaceted function, attention involves different processes. Sustained attention implies keeping on task until its completion. For an aesthetic experience to build up as a peak experience, sustained attention is required to focus on stimuli over a considerable amount of time. Alternate attention allows switching among focuses and processing complex stimuli. It would play a decisive role when aesthetically perceiving the stylistic and structural properties of an object. Selective attention, finally, inhibits different kinds of distractors, which results in holding the focus for aesthetic experience to take place. Within a data set of 148 cases, the detected *flatline* profiles (n = 17) were analyzed. All data were collected on a line of research on aesthetic experience and attention. Although different stages examined different aspects, the methodology remains the same in terms of stimulus and procedure. Music, performing arts/movement majors and subjects with no expertise on music or dance watched a selection of Tchaikovsky's "Swan Lake" while manipulating a CRDI dial. Afterward, they completed an exit questionnaire reporting on the experience, dial movements, location, duration and intensity. Finally, three standardized attentional tests were applied. Crossing CRDI curves

data and exit questionnaires responses allows describing different *flatliner* profiles. Mid-range between *rejective* and *ecstatic* responses, *hieratic* and *enigmatic* ones pose challenging questions when regarded as valid responses. Beyond a certain tolerance range, inconsistencies require a more detailed analysis. Preliminary attentional data would suggest that, for these subjects, processing limits may result in selective attention ruling out the tool manipulation for focusing on the stimulus and sustained attention not being able to satisfactorily perform the task at hand.

Keywords: CRDI measurement, aesthetic response, attentional processes, *flatliners*.

Introduction

The *Continuous Response Digital Interface* (CRDI) has been extensively employed for measuring the aesthetic response to music (Madsen, 2011). Cognitive responses to similar stimuli have also been studied with this tool, proving it to be equally valid. Some of these works have included visual elements as a complement for the listening experience. Although most of them concluded that images tended to reinforce the effect of music, or its comprehension (Geringer et al., 1996; Johnson, 1991), thus enhancing the experience, some researchers warned that complex, multisensory stimuli could give rise to more erratic results (Sheldon, 1994). In any case, as far as our literature review could reveal, previous CRDI studies, adopting for the most part a nomothetic approach, have mainly focused on the consistency of mean curves, and, whether discussing or not the characteristics of the stimulus, they usually sought to establish a consequent pattern of typical responses. Within a first stage of studies based on aesthetically more traditional stimuli, only Galante and Limongi (2013) addressed the fictionality of the average subject, even when recognizing it as a valuable knowledge source.

However, from the moment a cultural or perceptive shock occurred between the stimulus and the listeners, when a piece of music with non-traditional expressive elements was offered for the listening experience (Limongi et al., 2014), the consideration of individual responses became particularly relevant (Frega et al., 2016, 2017a). Unconventional features, those that probably had no place within cultural reference for information processing, generated more idiosyncratic responses. Frega et al. (2016) presented the first report of a curve with a minimal variability range, drawn as an almost flat line close to the lowest values in the CRDI dial. In the exit questionnaire, the participant gave the experience a low score and the field researchers

observed an attitude and verbal statements of total rejection toward the music work. The case was regarded as an outlier, clearly expressing annoyance.

Yet a new line of research, considering aesthetic responses to dance, introduced another significant change in the nature of the stimuli (Frega et al., 2017b, 2018). Visual information was no longer a complement to the auditory input, but a central issue per se. Previous studies, even those that concluded image was rather a distractor than a reinforcement of the listening experience, had always this last one as the focus of their measurement. When considering a ballet production, instead, both visual and auditory aspects of the stimulus, as well as their combination in itself, are equally provided for evaluation. Nevertheless, Geringer et al. (1996) suggest that, when considering a bisensory presentation mode, images could acquire a certain prevalence, especially when they develop a storyline or if they conflict with the audio. Also memory would favor images, since visual information would be easier to remember than audio-only data. Even for sustaining attention, images would have a more decisive role.

The interaction between the visual part of the experience, which may then prove hierarchical, and the manipulation of the CRDI dial would appear to be a complex variable that requires careful consideration. While some researchers detect respondents found no difficulty even in dealing with two different tasks on two dials at the same time (Brittin, 1989), others recognize the division of attention between watching and listening an audiovisual stimulus and simultaneously responding may be confusing and result in a general leveling of response (Frego, 1999).

Some incongruous responses appeared in a study carried out by McAdams et al. (2004). The researchers measured the correspondence of listeners' reports on resemblance or emotional force detected while experiencing an electroacoustic music piece to the work's structure. For that purpose, they employed a continuous response measuring tool that consisted on a box displaying the name of a grading scale, over a slider, labeled at its end points. Given their particular aim, they discarded response profiles with minimal variability, among them what they called *flatliners*, assuming these participants had probably stopped responding.

Flatliners

Participants are basically considered within this category when their response profile remain flat³, within a very small range, or present non-contrasting, extensive plateaus throughout the whole stimulus (McAdams et al., 2004; Limongi et al., 2018). From our perspective, a combined analysis with CRDI values and exit questionnaire responses may allow the definition of subcategories (Figure 1).

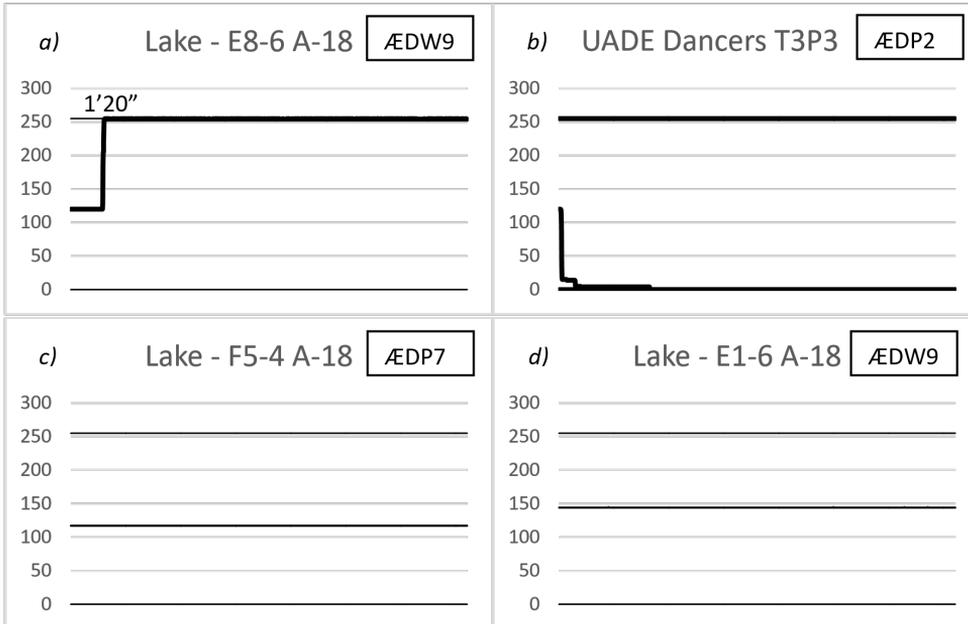


Figure 1. *Flatlines*. (a) Ecstatic, (b) Rejective (although, in this particular case, the participant recognizes having had an aesthetic experience during part of the stimulus), (c) Hieratic (even when the reported aesthetic experience lasted for part of the stimulus, the dial remains immobile), (d) Enigmatic (Middle-range line inconsistent with high score [Although a stable line may correspond to a long lasting experience]). In the upper-right corner box: Aesthetic experience (No = ~~Æ~~ / Yes = Æ / Several = Æ), movement of the dial roughly corresponded to its variations (No = ~~D~~ / Yes = D), duration of the experience (The whole selection = W / Parts = P / Solos = S / Duets [Pas de deux] = D / Other = O), intensity of the experience (Low = 1 to High = 10).

³ This kind of *flatline* may present one ample change usually at the beginning of the response and then remain stable at any given value for the rest of the measurement.

Flatlines may be observed at the top values of the CRDI dial. When the respondent declared s/he had an aesthetic experience, the movement of the dial roughly corresponded to its variations, the experience lasted during the whole stimulus, and gave it a high score, there is a strong consistency. This is the kind of response we may call *ecstatic*. Also consistent, but at the other end of the spectrum, *flatlines* near the bottom of the range, associated to low scores in the exit questionnaire, may be understood as expressing disgust, as being *rejective*. More ambiguous *flatlines* are those that present exclusively middle values. When responses to the exit questionnaire suggest a coincidence, with an experience lasting for the whole duration of the stimulus and Likert-scale values between 5 and 7 (within a 1-to-10 range), we may interpret them as *hieratic*, indicating an emotional restraint. On the other hand, when the *flatline* lingers at the center of the quadrant, but the participant declares having had an intense experience during parts of the stimulus and confirms a correspondence between its variations and the dial movements, the graphic becomes *enigmatic*.

In terms of consistency, it should be recognized that Johnson (1991) has already pointed out a possible vague correlation between CRDI means and overall ratings when the only categorical indicators on the display were positive through negative while the Likert scale in the questionnaire proposed several discrete marks, and suggested that the use of the same grading in both measurements would increase this relationship. However, such a considerable degree of discrepancy as showed by these *enigmatic flatlines* poses several other questions.

Attentional processes

Many CRDI studies have previously addressed attentional issues. Most of them inquired about possible competing and even exclusive focuses among different aspects of the stimulus itself (Madsen, 1997b; Madsen et al., 1997; Madsen & Geringer, 2000/2001). Others examined the effect of distractors on the aesthetic experience occurred while listening to music (Madsen et al., 2013) or a potential catalytic impact of manipulating a CRDI dial on such an experience (Madsen & Coggiola, 2001).

In any case, being attention a capacity that can only be observed in the performance of a given task, these pieces of research have largely centered on results. Yet *flatliners* were apparently offering none. Aesthetic experience, even avoiding *a priori* definitions, according to criteria adopted by this line of work, is expected to vary along the time, and continuous response measurement tools are meant to record such

changes. Precisely as a validation of the CRDI, Madsen et al. (1993) refer that “All subjects differentiated across the various selections, indicating relatively higher and lower aesthetic interest at various points within the music” (p. 174). As an outcome of CRDI measurement, *flatlines* require analyzing attentional processes instead.

Attention, a multifaceted function, involves different processes that can be characterized and measured separately. Sustained attention implies processing incoming data for a duration span that can be extended for as long as it takes to perform the task at hand. Its endogenous nature determines its top-down orientation (Mortu, 2018). According to Madsen et al. (1993), aesthetic experience, as a peak experience, would heavily rely on sustained attention, since a sustained focus over a considerable amount of time would be essential for the related emotion to build up. Alternate attention allows focus switching and processing complex stimuli that involve a multiplicity of aspects or elements. Since aesthetic experience would be determined by consideration of the stylistic and structural properties, in its detailed variety, overcoming the automatic urge to apply and subsume the experience to semantic categories, typical of everyday perceptual activity (what philosophers since the Enlightenment have called a “desinterested” enjoyment) (Cupchik et al., 2009), alternate attention would play an important role in aesthetically processing a manifold object. Finally, selective attention is crucial for distinguishing informative or relevant cues, directly related to the task, from those that may impair its performance. This is precisely the kind of process involved in inhibiting distractors and even pragmatic perceptual habits, which, in time, results in holding the focus for the aesthetic experience to take place.

All these modes of attention could usually function without a necessary conscious regulation. However, psychological and neurological findings suggest that aesthetic perception would require an intentional shift in controlling attentional processes and resources for allowing stylistic and structural properties to elicit an aesthetic experience (Cupchik et al., 2009; Höfel & Jacobsen, 2007).

Method

Participants, stimulus and procedure

The present work is based on data collected along several stages of a project on aesthetic experience and focus of attention conducted by a research team under the direction of Dr. Ana Lucía Frega at Universidad Argentina de la Empresa (UADE). Participants and procedure are described in several papers examining different aspects of the study (Limongi et al., 2018, Limongi et al., 2019; Murata et al., 2018). Attending to suggestions offered by Limongi et al. (2019), an additional group of subjects with some level of expertise on dance (musical theater students and dancers) ($N = 32$) was tested at UADE in June, 2019, in similar conditions and following the standard procedure.

Participants watched the same 14-minute 41-second long selection of the third act of Tchaikovsky's ballet, *Swan Lake*, performed by Gillian Murphy as Odile and Ángel Corella as Siegfried, with the American Ballet Theater in a 2005 production (Tikilin2010, 2013), while manipulating a CRDI dial displaying a negative-positive continuum for recording their aesthetic experience. Afterward, they completed an exit questionnaire reporting on the experience, its relation to dial movements, location, duration and intensity. Finally, subjects underwent a battery of three standardized attentional tests in order to evaluate their attentional performance.

Attentional tests

Designed by Emilio Carlos Tonglet (2015a, b, & c), these tools are a set of cancellation and speed tests using symbols that require respondents to cross out as many items as possible within a prescribed period of time. For sustained attention, the answer sheet presents scattered figures identical to proposed models that must be signaled, and distractors that, although similar, show a different arrangement. For alternate attention, numbered, colored items are presented in a scattered, unordered way, and must be cancelled consecutively, from least to greatest. For selective attention, figures to be canceled should match the models presented on top of the answer sheet, where additional distractors resemble examples, while offering different combinations of shape, internal disposition and color. In all the cases, scores consider canceled and omitted items and, for sustained and selective attention, also wrong answers.

Sample size

For the analysis presented in this paper, a total amount of 148 CRDI-exit questionnaire answers was considered. 87 of these subjects had also taken the described attentional tests. *Flatliners* conform the kind of profile described above with a CRDI curve with a range <150 and a deviation from each individual mean <50.00.

Results

Among the total amount of CRDI responses ($N = 148$), 19 of them (12,84%) are *flatlines*. Taking a similar precaution to that Limongi et al. (2018) did, two cases are ruled out because of a possible dial malfunction, which still leaves us with 17 cases (11,49%). Subjects are distributed in four different groups, according to particular goals in successive stages of the study (Table 1). Although the distribution of *flatliners* differs among groups, we cannot speak of significant associations ($\text{Chi}^2_{(1,148)} = .653$; n.s.).

Correlated data for general participants ($N = 148$) and *flatliners* ($n = 17$)

Group	n	Amount of <i>flatlines</i>	<i>Flatline</i> %	Attentional tests
Students taking an art movement class (A)	61	10 [i 1 dial failed? = 2 cases ruled out]	16.39% [13.11%]	0
Neither music nor dance majors (B)	30	1	3.33%	30
Music majors (C)	25	5	20%	25
Music-theater or dance majors (D)	32	3	9.38%	32
Total	148	19 [17]	12.84% [11.49%]	87 (58.78%)

Table 1. Respondent groups, flatline distribution and completed attentional tests.

In every case, once participants met the defining characteristic of each group, the sample was constituted by opportunity. Women prevailed in every group (including the *flatliners*), except for the music majors. Ages covered a wide range from 17 to 49, with a median value notably lower for music-theater or dance majors (18) than for the music majors (31) (Table 2).

Group	Age						Sex					
	Mean	Median	SD	Min	Max	Range	F	%	M	%	Non-binary	%
A	22.93	22	5.21	17	39	23	47	77.05	14	22.95	--	0
B	22.50	20	5.77	19	44	26	26	86.67	4	13.33	--	0
C	30.44	31	9.04	19	49	31	10	40.00	15	60.00	--	0
D	20.47	18	5.14	17	38	22	24	75.00	7	21.88	1	3.12
Total	23.58	21	6.86	17	49	33	107	72.30	40	27.03	1	0.67
Flatliners	23.29	22	5.75	18	38	21	13	76.47	4	23.53	--	0

Table 2. Age and sex distribution. (For Group, see Table 1).

Only one of the *flatliners* (male, music major, 21 y.o.) declared not having had an aesthetic experience, even when he rated *the experience* as high as 7. His line begins slightly negative, at a value of 118 in the CRDI scale (0 to 255), moves to 145 (slightly positive) at 1'45", during the musical climax of the first waltz, pas de deux, and remains there until approximately the final minute; after the appearance of the white swan, it jumps to 170.

Four of the *flatline* participants (including the one previously discussed) considered the dial movements did not correspond to the variations of the experience, which they graded 5, 7, 7, and 9. Besides the line we already described, two of the others are absolute *flatlines*, at 138 points (slightly positive), with a score of 5 and an experience coinciding with the duets; and at 118 points (slightly negative), with a score of 9 and an experience lasting during the whole selection. The last one of these CRDI responses presents a line that, after around 1'12", moves to the top value at the dial and sustains it until the end (the first pas de deux begins at 56").

For the *flatline* cases in which participants recognized having had, at least, one aesthetic experience and considered it was represented by the movement of the dial, we have three that could be considered mostly *rejective*. The response of the participant rating his experience with 2 points in the Likert scale, a contemporary dancer, results in a line that rapidly moves down and, since about 3'22", remains at 0 until the end. A male student at an art movement class produced a *flatline* at 115 CRDI points (negative) during the first 9'37" of the stimulus, then the *flatline* appears at 91 for the following 4'02", and for the final minute, since the appearance of the white swan, it moves up to about 152. The general experience is graded 3. The third case, a female music major, presents a negative *flatline* at 113, that rises reaching the top of the dial for the last 20", when the "true self" of the sorcerer is revealed. The Likert scale rating is just 4.

Another three, that declared having had a positive experience, offered *enigmatic* graphics. At first glance, we could observe a coincidence between a 7-point experience and a *flatline* at 117 (slightly negative), an 8-point experience and a *flatline* at 129 (center), and a 9-point experience and a *flatline* at 144. However, the first two respondents indicated that the reported experience lasted parts of the stimulus and no fluctuation is observed, even during transitional applause. For the remaining case, although the subject referred to an experience lasting for the whole time of the selection, 144 CRDI points appear to be low when it was rated 9.

Discussion and suggestions

The amount of detected *flatline* cases and completed attentional tests does not allow proposing general conclusions. However, several CRDI focus-of-attention studies (Madsen, 1997b; Madsen & Geringer, 1990, 2000/2001; Madsen et al., 1997) suggest trained musicians employ different attentional strategies than those observed in novices when listening to music, even when registered emotional responses tended to be quite similar (Fredrickson, 2000; Madsen, 1997a; Madsen, Byrnes, Capperella-Sheldon, & Brittin, 1993). Expertise in either music or dance may, indeed, be related to a possible leveling of responses or the appearance of *flatlines* when processing a complex audiovisual stimulus, as suggested respectively by Frego (1999) and Limongi et al. (2018).

Exposure, training, instruction, knowledge, and learned experiences modify relevance criteria, mediating and, even interfering with felt emotions. According to Schaeffer (2018), aesthetically untrained subjects tend to a pragmatic processing, rapidly and economically selecting relevant clues for categorizing, but partially neutralizing much of the object's specificities. For people with some training level, those for whom considering this kind of stimuli is not unfamiliar, many more aspects would become significant and the resulting experience would be much denser. This is a considerably more expensive process that carries the risk of attentional overload. Finally, experts would be able to attend to a vast amount of the stimulus's traits, yet more immediately and holistically, having a less demanding experience.

Processing complex stimuli would engage more cognitive resources, stressing attentional processes. "Attention is known to have a limited capacity to process information; not all incoming data can reach its focus" (Mortu, 2018, p. 53). In the case of *enigmatic* (and even *hieratic*) *flatliners*, it may appear that selective attention would rule out the tool manipulation for focusing on the artistic stimulus. A poorer performance recorded when evaluating the sustained attention could suggest that subjects found it difficult to keep developing the assigned task.

On the one hand, other ways of measuring the variability of the focus of attention while watching the stimulus, on real time, could lead us to achieving a deeper understanding of what may have caused participants to apparently stop responding, and even forgetting the given instructions. On the other, we may consider that "the extraction of experience from [a] reporting mechanism requires assumptions to be made about the listeners' "true" subjective experiences" (Upham, 2012, p. 1042). Are we measuring aesthetic experience or the ability to report a consciously registered

one? Are there relevant issues for a deeper analysis of average curves that have been historically useful in CRDI studies? It seems these questions warrant further research.

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A Comparison of Musicians' Pitch Perception Between Two Types of Earplugs and No Earplugs

Rebecca B. MacLeod¹, John M. Geringer², David S. Miller¹

¹Music Education, University of North Carolina Greensboro, USA

²Center for Music Research, Florida State University, USA

Abstract

The purpose of this study was to investigate the effect of wearing earplugs on musicians' pitch perception across three conditions: no earplugs, foam earplugs, and Etymotic™ earplugs. Participants were graduate and undergraduate music majors attending a large school of music in the Southeastern United States ($N = 72$). Participants tuned a series of complex stimulus tones to a reference tone at various intervals: unison, octave above, octave below, perfect 5th above, and perfect 5th below. To control for possible order effects, four different interval tuning orders and six different condition orders were used. A significant main effect was found for the three conditions, and for initial tuning direction. Results showed that participants were most accurate tuning without earplugs and Etymotic™ earplugs. Foam earplugs resulted in the least accurate tuning responses. Analysis of descriptive data revealed that descending intervals were tuned less accurately when stimulus tones were presented flat relative to the reference tone. For musicians, noise induced hearing loss remains a serious health consideration. The results of this study address musicians' concerns about earplug use interfering with pitch perception, especially foam earplugs, although the magnitude of differences appears relatively small. Additional research in authentic performance contexts could yield insights into how wearing earplugs effects various facets of music performance.

Keywords: hearing protection, earplugs, pitch perception, tuning.

Introduction - background and aim

Noise-induced hearing loss (NIHL) refers to any loss of hearing resulting from overexposure to sound. Researchers have found that sound overexposure, due to either duration or intensity, causes permanent damage to the small hair cells in the cochlea. NIHL is an occupational hazard associated with professions that require

employees to be around continuous or very loud sound, such as construction workers, factory employees, and musicians. To protect the hearing health of employees, the World Health Organization (WHO) and the National Institutes of Occupational Health and Safety (NIOHS) in the United States have published guidelines for sound pressure levels and hearing. Both the WHO and NIOHS recommend 85 dB SPL for eight hours as the maximum sound dose a person should receive daily. NIOHS reported that for every 3 dB increase, maximum exposure time should be cut by approximately 50%. For example, 88 dB SPL has a four-hour maximum daily dose (Chesky, 2008).

Musicians may have increased risk for NIHL due to the amount of time spent in rehearsals and performances (Beach & Gilliver, 2015; O'Brien, 2014; Washnik et al., 2016). In one study, 53% of professional orchestral musicians studied exceeded permissible daily dose of sound exposure during solitary practice (O'Brien, 2014). Washnik et al. (2016) investigated the amount of sound exposure university students experienced daily and found that half of the participants in their study exceeded 100% of the maximum daily dose in large ensemble rehearsals or through individual practice alone. In a survey of professional symphony performers, most musicians reported at least a small degree of hearing loss (Woolford et al., 1988). After controlling for age and other factors, the researchers determined that sound pressure levels contributed in part to permanent hearing loss. Public school music teachers who rehearse ensembles also exhibited a greater frequency and magnitude of NIHL compared to the general population (Beach & Gilliver, 2015; Cutietta et al., 1994).

Musicians have numerous options to protect their hearing. Changes to instrumental set-up, rehearsal schedules, acoustic treatments, and rehearsal environment, among others, have been shown to reduce musicians' prolonged exposure to high sound pressure levels (Amlani & Chesky, 2014). Orchestras surveyed by Woolford et al. (1988) reported making logistical changes to scheduling, seating, and facilities to reduce musicians' risk of NIHL. In some circumstances, however, it is not feasible to alter the conditions of the music rehearsal/performance environment. In these circumstances, proper earplug use may reduce exposure to high sound pressure levels (Woolford, et al., 1988).

Despite the efficacy of earplugs in reducing the risk of NIHL, classical musicians have reported low earplug use. Walter (2017) found that only 21% of surveyed undergraduate music education majors wore earplugs during practice or rehearsal, while 78% believed that surgery or hearing aids were a viable solution to correct for NIHL. "Loss of monitoring ability, alteration of timbre, uncomfortable fit, a feeling of

pressure from the earplugs, and a deteriorated localization ability” have been cited as the most salient reasons musicians do not wearing earplugs (Huttunen et al., 2011, p. 177; Rice & Coles, 1966). Musicians have also reported that earplugs hindered their performance, caused a lack of control, reduced sound quality, interfered with intonation, and created an occlusion effect (Laitinen & Poulsen, 2008).

Some evidence suggests that wearing earplugs may interfere with musicians’ ability to perceive and perform with accurate intonation (Beach & O’Brien, 2017; Cook-Cunningham, 2013; O’Brien et al., 2014). High definition earplugs are recommended as a viable solution for musicians because these earplugs reportedly reduce sound more consistently across frequencies than traditional earplugs. However, little research has investigated the effectiveness of these earplugs. O’Brien et al. (2014) ran a clinical trial comparing the efficacy of passive and active musicians’ earplugs designed by Etymotic with professional orchestral musicians. Following the trial, musicians were surveyed and reported difficulties with intonation (64%), hearing themselves (64%), hearing others (73%), and balancing with others (73%) while wearing the passive high definition earplugs. Musicians found active earplugs more effective with the exception of balance, but these earplugs are expensive and must be custom fit to the individual ear. If wearing earplugs inhibits musicians’ ability to play in tune, or their perception of their ability to play in tune, then musicians may be unlikely to wear them. Therefore, the purpose of this study was to investigate the effect of wearing earplugs on musicians’ pitch perception across three conditions: no earplugs, foam earplugs, and Etymotic earplugs.

Methods

Participants

Participants were graduate and undergraduate music majors attending a large school of music in the Southeastern United States ($N = 72$). Participants included: music education ($n = 47$), music performance ($n = 20$), and other music-related degrees ($n = 5$). The sample included 30 males and 42 females. All procedures complied with institutional and federal regulations in the treatment of human participants. Participants received a free pair of Etymotic earplugs upon completion of the study.

Conditions

Participants' pitch perception was tested across three conditions: no earplugs, foam earplugs, and Etymotic™ earplugs. The foam earplugs were standard 3M™ E-A-Rsoft™ Yellow Neons™ Earplugs 312-1250. These earplugs advertise an overall Noise Reduction Rating of 33 dB. Etymotic™ earplugs (Etyplugs) are non-custom earplugs designed for musicians and passively reduce sound by approximately 20 dB. Both foam and Etymotic™ earplugs attenuate sound in slightly larger magnitudes for frequencies above 1000 Hz.

Tuning stimuli

An acoustic tone performed by the principal oboist in a regional symphony served as the reference tone. The recording was made in a recital hall designed for solo and small ensemble performances. The oboist was asked to perform an in-tune C[#]₄, using a tuner as a visual guide. We chose C[#]₄ as the reference tone because it is in a middle range and is not frequently used as a tuning pitch (such as an A for string players, and A, B^b, F for wind players). An iPhone 7 with an externally mounted Shure digital stereo condenser microphone (Model MV88) was used to record the C[#]₄ oboe tone. To keep the oboe tone within ±1 cent of the target frequency (277.18 Hz), we made minor adjustments with Adobe Audition CC 2018 (v. 11.1).

Participants manipulated complex tones to match the reference tone. During pilot testing, simultaneous tuning of simple electronic waveforms (e.g., sine, square waves) resulted in the presence of overt beats that listeners could use to easily tune the harmonic intervals. To eliminate these beats, we used Adobe Audition CC 2018 (v. 11.1) to construct complex electronic tones with a fundamental and four additional integral multiple harmonics with a decreasing power spectrum. As a result, participants tuned the complex tones to the perceived pitch of the reference tone without relying on obvious beats. The following complex tones served as the stimulus tones that participants manipulated in order to be in-tune with the (C[#]₄) reference tone: C[#]₄, C[#]₅, C[#]₃, G[#]₄, and F[#]₃. These pitches were selected because they form intervals of unison, ascending and descending octaves and perfect fifths relative to the reference tone.

Response apparatus

The *Continuous Response Digital Interface* (CRDI) and *Amazing Slow Downer* software have been used previously to record tuning responses of musicians (Geringer et al., 2010; Geringer, 2010). The CRDI allowed participants to manipulate the pitch of the stimulus tones by turning an unmarked dial. We set the pitch modulation parameters of *Amazing Slow Downer* software (v. 3.6.1) so that the entire range of the CRDI dial (255-degree arc) was available. Participants could manipulate the stimulus tone up to 50 cents sharp or flat by turning a faceless dial without visual cues so that listeners were not able to ascertain visually the location of the middle of the dial. The only feedback, other than aural, concerning dial position was the dial stops at the two extreme endpoints (+/- 50 cents). All tones looped continuously allowing participants ample time to adjust the tuning until they perceived the stimulus note as in-tune with the reference tone.

Procedure

The tuning task consisted of five intervals presented simultaneously with the reference tone: unison, octave above, octave below, perfect 5th above, and perfect 5th below. Listeners were tested individually in a quiet room. Tones (reference and stimulus) were played monaurally through a set of speakers placed equidistant from the participant on either side. Reference and stimuli tones were set at the same loudness levels, and participants were able to adjust the loudness if desired. Participants heard the reference tone first, then the stimulus tone was presented concurrently. Participants adjusted the pitch of each stimulus tone until they believed the interval was in tune with the reference tone. The stimulus tones were presented initially as either sharp or flat compared to the reference tone. The degree of initial sharpness or flatness ranged from 15-20 cents to reduce potential bias caused by turning the dial by similar magnitudes for each trial.

In order to balance for possible order effects, four different interval tuning orders and six different condition orders were utilized. Bias resulting from the initial sharpness or flatness of each stimulus tone was balanced by initially presenting each tone sharp in two of the orders and flat in the other two. All tuning orders began with the unison interval so that participants could familiarize themselves with the procedure. Participants were assigned randomly to one of the 24 tuning order and condition order combinations.

Results

Raw data consisted of participants' tuning adjustment deviations in cents relative to equal temperament. We analyzed tuning adjustments in two ways: One included the direction of deviations (sharp or flat), and the other used absolute values of the deviation. We screened data to verify that the assumptions of the analysis of variance were met and found that sphericity was violated for the independent variable of intervals and the interaction of intervals and condition. We therefore conducted a two-way MANOVA (tuning direction X condition with intervals as the variates) and verified our projected sample size with a power analysis. For a MANOVA with repeated measures (within factors), results indicated a minimum sample size of 60 (we input a projected small effect size of partial $\eta^2 = .05$, alpha = .05, and power level of .80).

In the directional analysis, significant main effects were found between the three conditions, $F(10, 266) = 2.69, p < .004$, partial $\eta^2 = .09$. There was a significant difference in tuning perception between no earplugs and foam earplugs. Participants were most accurate tuning without earplugs ($M = -1.5, SD = 10.11$), followed by Etymotic™ earplugs ($M = -2.55, SD = 10.99$). Foam earplugs resulted in the least accurate tuning responses as well as the highest variance between participants ($M = -3.44, SD = 12.66$).

Means and standard deviations of the absolute deviation data for the three conditions (no earplug, foam earplug, and Etymotic™ earplug) and the five tuning intervals (unison, fifth above, octave above, fifth below, octave below) are shown in Table 1. Significant main effects were found between the three conditions, $F(10, 264) = 2.84, p = .002$, partial $\eta^2 = .10$ and for the initial tuning direction, $F(15, 177) = 2.03, p = .016$, partial $\eta^2 = .14$. Subsequent univariate results showed significant differences for tuning the interval an octave above ($p = .003$) and octave below ($p = .002$). Pairwise comparisons showed that participants' pitch acuity was more accurate wearing no earplugs when compared to foam earplugs. Further, there was no significant difference between Etymotic earplugs and no earplugs, or between Etymotic and foam earplugs. For initial tuning direction, univariate results showed significant differences for the intervals of descending octave ($p = .035$) and descending fifth ($p = .011$). Overall, participants were most accurate tuning without earplugs ($M = 7.04, SD = 7.40$), and Etymotic earplugs ($M = 7.94, SD = 8.00$). Foam earplugs resulted in the least accurate tuning responses ($M = 9.45, SD = 9.09$).

Condition, Interval	Directional <i>M</i>	<i>SD</i>	Absolute <i>M</i>	<i>SD</i>
0, Unison	-.25	8.68	6.31	5.93
0, P8↑	-.65	6.37	4.79	4.22
0, P5↑	.76	12.74	8.88	9.11
0, P8↓	-4.13	12.19	9.36	8.78
0, P5↓	-3.25	8.49	5.89	6.91
Foam, Unison	-1.43	10.08	6.99	7.36
Foam, P8↑	-3.11	9.93	7.5	7.17
Foam, P5↑	.94	14.61	11.31	9.21
Foam, P8↓	-8.71	14.70	13.38	10.57
Foam, P5↓	-4.89	12.28	8.08	9.23
Ety, Unison	-.97	8.88	6.28	6.32
Ety, P5↑	-2.11	8.16	6.03	5.85
Ety, P8↑	-1.83	14.17	10.39	9.73
Ety, P5↓	-5.11	11.25	9.44	7.40
Ety, P8↓	-2.74	11.31	7.71	8.94

Table 1. Mean cent deviation for conditions by intervals.

Analysis of descriptive data indicated that descending intervals were tuned less accurately when stimulus tones were presented flat relative to the reference tone (see Table 2). When the octave below interval was presented to listeners circa 15-20 cents below the pitch to be matched, tuning deviations were approximately 5 cents greater than when presented above the pitch to be matched.

Intervals:	Unison	Octave Up	Fifth Up	Octave Down	Fifth Down
Order 1	Flat: -5.11	Sharp: +3.06	Flat: -9.09	Sharp: -0.43	Flat: -10.67
Order 2	Flat: -3.82	Flat: -6.00	Sharp: +7.82	Flat: -12.39	Sharp: +2.02
Order 3	Sharp: +4.72	Flat: -5.82	Sharp: +8.54	Flat: -12.89	Sharp: -0.24
Order 4	Sharp: +0.67	Sharp: +0.93	Flat: -7.43	Sharp: +1.76	Flat: -5.61

*Note: Initial stimuli were presented either sharp or flat (+/- 15-20cents) relative to the stimulus pitch. Shown in Table 2 are the initial pitch category and the mean tuning responses of listeners.

Table 2. Mean cent deviation for intervals by initial stimulus direction*.

Discussion and conclusions

Participants' tuning responses showed that in both the directional and absolute deviation analyses, listeners were most accurate when tuning without earplugs, then using Etymotic™ earplugs, and least accurate with foam earplugs. These differences were statistically significant for the intervals of ascending octave, descending octave, and descending fifth. Additionally, participants tuned flatter overall while wearing foam earplugs than in the other conditions. While this difference was not significant in the directional deviation analysis, the difference was significant in the absolute deviation analysis. These findings seem to affirm musicians' self-reported perceptions that wearing foam earplugs interferes with how they tune and hear pitch (Cook-Cunningham, 2013; Huttunen et al., 2011; O'Brien et al., 2014).

The initial presentation of the stimulus tone had a medium effect size on tuning accuracy. Participants consistently tuned flat when the stimulus tone was presented flat, and tuned sharp when it was presented sharp, with few exceptions. In general, participants tended more flat than sharp overall consistent with previous findings (Hopkins, 2014).

Participants tuned flatter when wearing earplugs compared to no earplugs. Wearing earplugs may distort musician's perception of timbre as reported by Huttunen et al. (2011). Researchers have previously found that changes in timbre affected tuning accuracy, so this explanation seems plausible (Allen & Oxenham, 2014; Caruso & Balaban, 2014; Geringer et al., 2015; Worthy, 2000). Chesky and Amlani (2014/2015) tested attenuation levels across a wide range of frequencies in an earplug

model similar to the one in our study and found that below 125 Hz, attenuation was only approximately 25% of the stated levels (i.e., 5 dB rather than the 20 dB in his tested model). Earplugs block sound frequencies unevenly, contributing to timbre changes and thus affecting musicians' pitch perception. Chesky also noted that testing methods were designed for factory use, where much of the noise is above 125 Hz. He advocated for new testing standards for musicians' earplugs because musical settings utilize the bass range of frequencies below 125 Hz.

For musicians, NIHL remains a health consideration. The results of this study appear consistent with musicians' concerns about earplug use interfering with pitch perception, especially foam earplugs. To preserve the integrity of pitch perception, we suggest that performers and teachers avoid the use of foam earplugs. Instead, we recommend that they should opt for musicians' earplugs, understanding that it may alter their perception of pitch slightly. Additionally, other methods of sound control can be adopted to help protect and preserve hearing.

In the present study, we investigated two types of earplugs. While we chose these models based on availability and affordability, conclusions should not be reached concerning other types of earplugs. Tuning tasks in this study were designed to measure pitch perception, not performance. While earplug use may alter pitch perception, we did not investigate effects on performed intonation accuracy of musicians while wearing earplugs. Finally, our design was limited in both register and intervals, spanning only two octaves ($C\#_3$ to $C\#_5$) and included only five intervals (unison and ascending/descending perfect fifths and octaves).

Additional investigation into more types of earplugs, such as musician custom-molded earplugs, should be conducted. Alternative experimental designs that measure both musicians' perception and performance of pitch in authentic performance or rehearsal contexts should be explored. Researchers should also investigate the complete range of frequencies commonly found in musical performance. While pitch and intonation has been identified in previous studies as an important variable when evaluating performance (Geringer & Johnson, 2007), it is not the only salient aspect of quality performance. Exploring the effect of wearing earplugs on perception and performance of other musical elements, such as articulation, balance, and phrasing, would increase our understanding of how earplugs may affect music performers, teachers, and listeners.

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Musicians' General Self-esteem Contrasted with their Self-esteem Relating to Music Performance/Conducting

Clifford K. Madsen¹, Eileen McGonigal²

¹Center for Music Research, College of Music, Florida State University, USA

²Central College, IA, USA

Abstract

This study investigated the general aspect of musicians' self-esteem in contrast to musicians' self-esteem relating to their applied instrument/voice/conducting. The research questions were: (1) Is there a difference between musicians' general self-esteem and their self-esteem regarding music performance and (2) are there differences between Music Therapy majors and Music Education/other music majors. This research used each participant as its own control. Each participant was asked identical questions posited by the original Rosenberg test with an additional category "in performing" along-side the original questions. The test was given to 452 undergraduate and graduate music majors representing eight geographical areas of the United States. Results indicated that there was a statistically significant difference between Music Therapy majors and Music Education/other music majors as well as self-esteem in general and self-esteem in relationship to performing in particular. The major implication of the study indicates that most musicians' self-esteem is inextricably linked to their self-esteem concerning their music performance.

Keywords: musicians' self-esteem, musicians' self-concept, identity.

Introduction

Few aspects of who we are seem as important as one's own views of self. Self-esteem or self-evaluation is the idea or mental image one has of oneself which includes one's strengths, weaknesses, status, and any other salient attributes, including those that are music related. This study was undertaken in an attempt to differentiate overall self-esteem in contrast to one's self-esteem in music and to determine if differences exist

between Music Therapy and Music Education/other Music Education/other music majors.

Theoretical underpinnings concerning self-esteem come from various sources. The topic of general self-esteem and self-concept have been studied extensively and derive from the concept of self. This sense of "self" must be related to some thing or to some thoughts – one's own self-view. Concept formation is a process whereby a person learns to form interrelationships among various taxonomical structures. If a rule is applied to a particular object, then one has a concept that falls into a particular class. As models for defining maturational changes, concepts are at least as important in such contexts as they are for classification only.

Piaget was very influential during the 20th century and particularly noted for his classification of cognitive developmental stages. For example, infants must first learn to distinguish themselves from their external environment. As they continue to interact with the physical world, they come to understand other aspects thus building conceptual relationships. Later in the preschool period, children grasp the concept of objects separated in space. Piaget characterized this period of learning as classifying objects only on the basis of perceptual attractiveness; concrete physical features (Piaget, 1972) gradually moving to the highest level of formal operational stage found among adolescents and adults. However, data from cross-sectional studies of adolescents do not support the claims indicating that *all* individuals automatically move to the next cognitive stage as they biologically mature, simply by growing older. Data from adolescents indicate only 30 to 35% of high school seniors attained the cognitive development stage of formal operations (Kuhn et al., 1977). It appears that for formal operations, maturation establishes the basis; however, a special environment is required for most adolescents and adults to attain this stage.

The importance of the formation of self-concept or self-actualization and development of self-esteem have been widely discussed topics for many years. Maslow's (1943) theory of self-actualization is based on a hierarchy of needs. Modifying his theory as he aged, he assumed that one's self-concept relates to these learned needs (Maslow, 1970). Rogers (1959) accepts the Maslow tenants, but added the requirement that a person must self-actualize as he/she develops. Rogers rejected the deterministic views of both psychoanalysis and behaviorism and theorized that a person's view of self determines his behavior and his relation to the world, and that true therapeutic improvement occurs only when the individual changes his own view of self (Bandura, 1997; Dewey, 1997; Vygotsky 1986). According to the social cognitive

perspective, human behavior is explained by a reciprocal model in which the person, environment, and behavior continuously interact in a triadic fashion (Bandura, 1978). According to this perspective, achievement behavior is constantly influenced by self-constructs as well as by the classroom-learning environment.

The concept "musician" constitutes a classification rule relating to participation in some form of making music. As one continues to learn or discriminate, objects are classified on the basis of perceived properties. Emphasis on concrete empirical discrimination learning can be contrasted with a more abstract nature of concept formation. When a stimulus is perceived to match several different past experiences, perception becomes an amalgam of these experiences because a concept need not bear an all-or-none relation to a set of others; for example, there is no absolute distinction between an "excellent" and "awful" music performance. When we judge performed music to be either good or bad, we have established some gradations of discrimination. Similarly, Rosenberg (1965) believed that every dimension of the self is rated and judged against a self-value that evolves and grows during childhood and adolescence. Thus, self-esteem is the attitude and evaluation toward one's self, resulting in an evaluation of every characteristic of the self.

Perhaps the most longitudinal and comprehensive research on self-esteem was completed by Orth et al. (2018) who investigated the development of self-esteem from age 4 to 94 years. This meta-analysis of longitudinal studies was based on 331 independent samples including data from 164,868 participants. The meta-analyses were conducted for the full set of samples and for different effect sizes. Data indicated that levels of self-esteem increased from age 4-11 years, remained stable from age 11 to 15, increased strongly until age 30, continued to increase age 60, peaked at 60 and remained constant until age 70, declining slightly until age 90 and declining more strongly until age 94. Although the measure of self-esteem accounted for difference in effect size, the moderator analyses suggested that the pattern of mean-level change held across gender, country, ethnicity, sample type, and birth cohort.

Whereas self-esteem appears to be mostly unaffected by gender, country, ethnicity, sample type, and birth cohort, development of identity occurs partly as a result of the interaction between self-concept and self-esteem. Self-esteem may be defined as, "the attitudinal, evaluative component of the self; the affective judgements placed on the self-concept consisting of feelings of worth and acceptance, which are developed and maintained as a consequence of awareness of competence, sense of achievement, and feedback from the external world" (Guindon, 2002, p. 207). Fitts

(1972) and Coopersmith (1981) similarly suggest that self-esteem is the result of evaluations and judgments of the people most important to us, while Gecas (1982) identified self-esteem as based on a sense of competence, power, or efficacy. In music, when students experience successes through completing various course activities arranged at increasing difficulty levels, they will be more likely to experience increased self-efficacy and self-esteem, which, in turn, serve to improve students' academic/music achievement.

Self-concept has been studied extensively with various populations as well as investigated to determine aspects of construct validity (Byrne, 1984; Hagborg, 1993). Several instruments for testing self-concept have been created to assess and measure self-concept. Hash (2017) developed the Music Self-Concept Inventory (MSCI) for college students consisting of 13 items intended to assess change or development in music self-concept. The Musical Self-Concept Inquiry (MUSCI) and the Musical Self-Concept Inquiry for Youth (MUSCI_youth) were also created by Fielder and Spychinger (2017) to measure self-concept in students and adolescents. The Music Self-Perception Inventory (MUSPI) assesses six music specific self-concept dimensions as well as music self-concept and consists of 84 items (Morin et al., 2017). While these instruments attempt to accurately measure self-concept, the modified Rosenberg Self-Esteem Scale is a 10-item scale that measures self-worth by measuring both negative and positive feelings about the self, allowing for the evaluation of individual self-esteem.

Developed in the 1960s, The Rosenberg Self-Esteem Scale is one of the oldest and most frequently used self-esteem tests (Rosenberg, 1989). Since that time there have been a plethora of studies using the instrument as well as several investigating its validity and reliability; thousands of students have been studied in relationship to sex roles (Rosenberg & Simons, 1975) through older adults (Mullen et al., 2013). The original sample for which the scale was developed utilized the Guttman scale and generally has high reliability, with test-retest correlations in the range of .82 to .88, and Cronbach's alpha for various samples are typically in the range of .77 to .88 (Blascovich & Tomaka, 1991; Rosenberg, 1986). Rosenberg in *The Historical Overview* addresses the reluctance of some research to seriously address self-esteem with these words:

... a major obstacle to progress in self-concept theory and research has been certain dominant or major scientific paradigms that were inhospitable to research on this topic. In psychology, it was the behaviorist paradigm; in sociology, the

social fascist and social behaviorist paradigms; and in psychoanalysis, the Freudian paradigm. Largely because of these paradigms, self-concept was not considered part of the legitimate subject-matter of this field. The history of self-concept research illustrates how scientific principle can stand in the way of scientific progress. (Rosenberg, 1989, p. 34)

Music Education and Student Self-Concept: A Review of Literature encouraged music educators to be more cognizant of self-concept in relationship to music education (Reynolds, 1992). Additionally, research indicates music teachers primarily identify as performing musicians (Ballantyne & Grootenboer, 2012). Since teachers and likely music therapists identify as performing musicians, this perception seems extremely important in understanding how and why this identity develops and influences all subsequent issues.

The present study was stimulated by the need for data relative to these specific issues and asked two questions: (1) Does a musician's overall self-esteem differ from their self-esteem concerning performing/conducting, and (2) are there differences among Music Therapy majors versus Music Education/other majors.

Method

A pilot study was done to ascertain feasibility of combining music questions with the original Rosenberg Self-Concept Inventory. Participants were 103 undergraduate and graduate students attending a large southeastern university. Results of the pilot study indicated that the music addition to the original Rosenberg inventory was adequate to answer the research questions. The Rosenberg inventory was selected because it has been used thousands of times with a plethora of specified populations. The original Rosenberg test consists of 10 questions half of which are stated positively the other half negatively, utilizing a Likert-type scale. Because of its simplicity in using each subject as its own control, every question could be modified to include music questions very similar to the general questions. Participants were asked identical questions posited by Rosenberg with an additional category under the heading "In General" positioned by category "In performing/conducting." The arrangement of questions was equally divided into two parts: positive statements and negative statements. The present inventory was given to 452 participants, representative of eight different regions of the US. These regions corresponded to the various geographical divisions of the *American*

Music Therapy Association (AMTA). Of the 452 participants, 132 were Music Therapy majors and 320 were Music Education/other music majors. The study utilized the same modified Rosenberg inventory that was tested in the initial pilot study. Positive questions were #s 1, 3, 4, 7 & 10; negative questions were #s 2, 5, 6, 8 & 9. Participants circled one of four responses on a Likert-type scale: SA for Strongly agree, A for agree, D for disagree, and SD for strongly disagree. All SA responses received a score of 1, all A responses received a score of 2, all D responses received a score of 3, and all SD responses received a score of 4 (see Table 1). It should be noted that lower numbers represent higher self-esteem.

After completing these questions, participants were asked to complete a section concerning additional demographic information including academic level, academic major, years privately studied on primary and secondary instruments, importance of the "right teacher," importance of performing, and impact of not being able to perform.

Results

The scale for the negatively worded items was reversed, to provide consistency in comparing the items. Responses to the 10 questions were all positively correlated at $p < .001$, and ranged from $r = .29$ to $.71$. Data from the 10 questions were therefore combined, separately for the general and music contexts. Standard deviations were relatively small and were all less than 0.50. Means were higher for the music-specific questions ($M = 2.07$), indicating lower self-esteem, than responses to the "in general" questions ($M = 1.84$). Music therapists had higher means ($M = 1.94$), indicating lower self-esteem, for the general questions than the Music Education/other majors ($M = 1.80$). For the music specific questions, music therapists ($M = 2.24$) again reported lower esteem ratings than the Music Education/other music majors ($M = 2.00$).

A two-way ANOVA was conducted with one between subjects factor (major) and one within subjects factor (context). Results indicated there was a significant difference between majors, $F(1, 450) = 17.23, p < .001, \eta^2_p = .04$. There was also a significant difference between the general versus music context responses, $F(1, 450) = 171.36, p < .001, \eta^2_p = .28$. However, there was a significant interaction between major and context, $F(1, 450) = 7.95, p = .005, \eta^2_p = .02$ (see Figure 1). The difference in means between the two majors was greater for the music context than for the general context.

Self-Esteem Scale (Rosenberg—Revised by Madsen, 2012)	
Instructions: Below is a list of statements dealing with your general feelings about yourself and specifically about If you strongly agree, circle SA . If you agree with the statement, circle A . If you disagree, circle D . If you strongly disagree, circle SD .	
1. On the whole, I am satisfied with myself:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
2. At times, I think I am no good at all:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
3. I feel that I have a number of good qualities:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
4. I am able to do things as well as most other people:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
5. I feel I do not have much to be proud of:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
6. I certainly feel useless at times:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
5. I feel that I'm a person of worth, at least on an equal plane with others:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
8. I wish I could have more respect for myself:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
9. All in all, I am inclined to feel that I am a failure:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD
10. I take a positive attitude toward myself:	
In general	In performing/conducting
SA – A – D - SD	SA – A – D -SD

Table 1. Self-esteem scale developed from the Rosenberg Self-Concept Inventory.

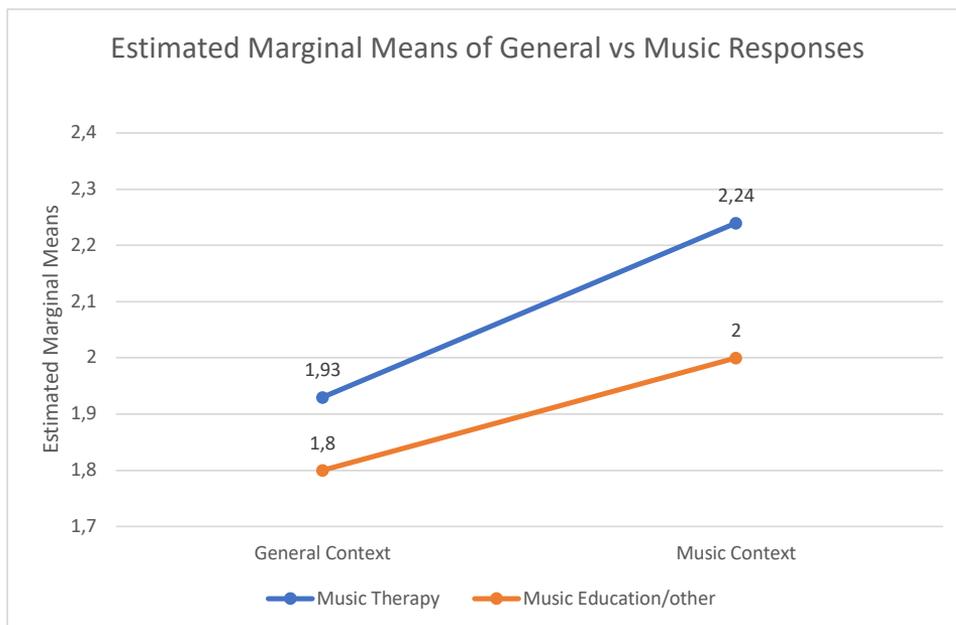


Figure 1. Estimated marginal means of general vs music responses.

Discussion

This study compared general self-esteem with self-esteem when performing or conducting music, as well as comparing Music Therapy majors with Music Education/other music majors. Means were consistently higher across all questions for the music context responses than for the general responses, indicating lower self-esteem towards performing music as compared to general self-esteem, regardless of major. In addition, means were consistently lower from Music Education/other music majors than from Music Therapy majors, indicating that Music Education/other music majors report a more positive self-esteem generally and also a more positive self-esteem toward music performing than Music Therapists. These results also indicate that Music Therapists display less self-esteem than Music Education/other music majors, and report even less self-esteem toward music performance.

On the basis of this study, further research might include additional attributes related to self-esteem at various ages and investigate other sociological issues, especially regarding status during adolescence. It seems that social issues are paramount during these formative years (Madsen & Kelly, 2002). Most often peers

have a great deal of influence on each other. The desire to not only “fit in” but to be recognized seems very important. For example, if an adolescent violinist can play the *Vivaldi a minor* with aplomb as opposed to still squeaking in a public performance, then the youngster is held in high peer esteem (Heaney, 1994). When a trumpet player can triple-tongue through a *Vandercook* solo, or if a pianist can quickly negotiate a fast *Kabalevsky* performance; or if any young person gets to conduct (any group) or be the leader, as with a drum major or student leader, usually this receives strong positive *peer approval* (Madsen, 2012). Alternately, if one is still struggling with one’s instrument and does not receive positive praise then he or she will often quit to avoid social ridicule. Sometimes belonging to a revered group is what maintains the desire to continue and being excluded results in dire consequences (Pipher & Gilliam, 2019). Indeed, recent research indicates that for each student there needs to be a compelling reason to “go to school” or to be engaged (Barkley, 2010). Often this reason is a music ensemble. If it is determined that achieving some peer status in the developmental years might have a strong impact on identity and subsequent career goals, then music teachers might provide these experiences with the aim of providing complete peer performance immersion that has a good chance for a positive outcome. As a music student matures, other identities and activities might override the initial phenomenological experiences, but the career trajectory will already be in place. Responses indicate that when we feel both empowered and personally connected, the desire to continue seems especially strong. If it is powerful enough, perseverance will probably also be strong. Obviously, more research in these areas is warranted.

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Japanese Young People's Selection of Favorite Music: Influence of the Tradition, Originality, and Creativity of Musical Products

Hikomichi Mito

Faculty of Psychology, Meiji Gakuin University, Japan

Abstract

This study explored the factors determining Japanese young people's selection of favorite music. The study specifically aimed to discuss the extent to which the young people's selection of music was based on artistic reasons such as the tradition, originality, and creativity of the musical products. Three young musicians who had received special musical training in Western classical music for more than 15 years, and nine university students were interviewed. The interviews addressed the reasons the participants selected certain music over others, and the questions specifically focused on aspects such as the style of a musical performance, the characteristics of the music itself, and the characteristics of the musician. The Modified Grounded Theory Approach was adopted to analyze the interview transcripts. The results showed that type of musical selection varied based on the degree of commitment to particular artists, and the reasons for selecting music seemed to be broadly related to the degree of commitment to a particular artist. The participants with a high degree of commitment placed importance on the originality of the artist, identity of the artist and listener, and musical style while selecting a musical product. On the other hand, the participants with a low degree of commitment pointed out to the influence of others and of the musical elements as the reasons for selecting musical products.

Keywords: favourite music, creativity, young Japanese people.

Introduction - background and aim

Studies on young people's musical behavior in Japan revealed various types of music selection styles in young people. For example, one important characteristic of young people's listening style was the collapse of the division of musical genres. In the 1990s, some pop musicians in Japan became broad-minded toward musical genres such as Rock, Pop, and Folk, and incorporated various kinds of music styles into their own

musical style (Take, 2001). Many young listeners also had a similar attitude towards musical genres. They did not stick to particular genres or particular musicians, but rather listened to a vast number of songs from a variety of styles. This tendency was reflected in their style of musical consumption. Although many million sellers emerged after 1990, these sold their maximum numbers within a few weeks, in contrast to the usual million sellers that attained their maximum sales over a long period (Abe, 2003). As Fujio (1996) explained, young people buy a variety of CDs like “buying a snack,” and they listen to songs, one after another, in a short cycle, regardless of their style.

While many young people prefer to listen to a variety of popular music, some young listeners show a strong preference to particular musical genre or musician/s. Abe (2003) pointed out that the degree to which young people commit to particular musicians varies. He classified young listeners’ musical behavior from their style of music consumption and highlighted the tendency of young listeners to have a strong attachment to particular musicians.

The critical questions are “why do music selection styles differ?” and “what are the reasons for selecting particular musicians or musical pieces?” Young listeners’ music selection has long been one of the most interesting topics for music educators, and a vast amount of empirical studies have been conducted to investigate the factors influencing music preferences. One of the most influential factors that determine music preferences is the style of music. In general, empirical studies showed that while young children tend to prefer most kinds of music, they begin to show clear preferences for popular music as they grow older (Brittin, 2000; Fung et al., 1999; Geringer & Guerra, 2002). Some studies looked at the influence of musical elements on musical preference. Geringer (2010) focused on the effect of tempo and pitch on musical preference. In this study, the listeners were found to prefer increased levels of tempo and pitch for relatively slow symphonic excerpts, whereas for fast tempo excerpts, the listeners preferred decreased level of tempo and little change in pitch.

The studies discussed above brought interesting insights on the factors that influence young listeners’ selection of music. However, since these studies investigated the musical preference in relation to the broad aspects of musical characteristics, such as the genre and elements of music, these studies do not explain how the characteristics of particular musical pieces or musicians affect music selection.

Mito (2015) interviewed six professional musicians from Western classical, Jazz, and traditional music genres, and found that all the participants focused on

establishing originality in their musical performances. Although all the participants of this study placed much emphasis on expressing their traditional performance style, they were consciously seeking time to develop their own styles.

Mito (2019) further investigated the component of originality in musical performance by analyzing the autobiography of famous musicians. In this study, Western classical musicians as well as popular musicians from Jazz, Blues and Indian classical music were targeted, and four main aspects of originality in musical performance were identified: sonority, timing and rhythm, emotion, and inevitability. The results showed that musicians seemed to consciously review and evaluate the originality of their performance through these four qualities.

These studies indicated that the musicians consciously developed many aspects of their performance in order to construct their original style of performance. The question is, "how is musicians' originality perceived by young listeners?" Although professional musicians' notions of originality in performance is described by the previous studies, it is still uncertain how ordinary young listeners consider originality when selecting their favorite musicians and musical pieces. As discussed in the previous section, it has been reported that some young listeners showed a strong commitment to particular musicians. Indeed, musicians' originality might be one of the important reasons for selecting music.

The present study explored the factors determining Japanese young people's selection of favorite music. The study specifically aimed to discuss the extent to which young people's selection of music was based on artistic reasons such as the tradition, originality, and creativity of the musical products.

Methods

Participants

Three young musicians and nine university students volunteered for the study. The participants were divided into two groups, musicians and non-musicians, according to their musical experiences. The three young musicians were graduates from a musical college and all of them had an established career as a professional musician, indicated by characteristics such as winning an award in a competition, performing with orchestras, and performing in recitals. Three university students were actively engaged in Western classical music activities, with more than 10 years of special

training in Western classical music. These six participants were grouped as musician participants (hereafter M participant). The remaining six participants was grouped as non-musician participants (hereafter NM participant), who had little musical training, but were actively engaged in popular music activities.

Data collection and questionnaire

All the interviews were conducted by the author. Although predetermined questions were prepared, semi-structured interviews were conducted. The interview was started by discussing the participants' favorite music and artists, followed by the question "why do you prefer to listen to those music and artists?"

Data analysis

The Modified Grounded Theory Approach (M-GTA) was adopted to analyze the interview transcripts. The M-GTA is one of the modified versions of grounded theory, developed by Kinoshita (2003). The major difference between the M-GTA and the original GTA is that the former directly produces the concept by interpreting the data, while the original GTA develops concepts by using intervening tools such as codes and properties (Kinoshita, 2003). Therefore, in the M-GTA, the process of analysis does not proceed in a well-sequenced manner, by slicing the data and coding them, but starts the analysis of data at the concept level, reading and interpreting the data within the context of the data as a whole. In the process of developing the concepts, one "analyzing worksheet" is developed for each concept, which consists of the name of the concept, its definition, variation (examples of the concept), and memos for interpretation. Finally, the concepts are further grouped to construct categories by examining the relationship between the concepts.

Results

The interview data yielded 21 concepts. After examining the relationships between these concepts, categories were developed, with *degree of commitment to particular artists* as a core category. The other six categories; *importance of originality*, *identity of the artist*, *identity as a listener*, *importance of style*, *influence of others*, and *musical elements* were positioned somewhere between two extremes: low and high commitment to a

particular artist (See Figure 1). In the following section, the content of each of these categories and the relationship between these categories are discussed.

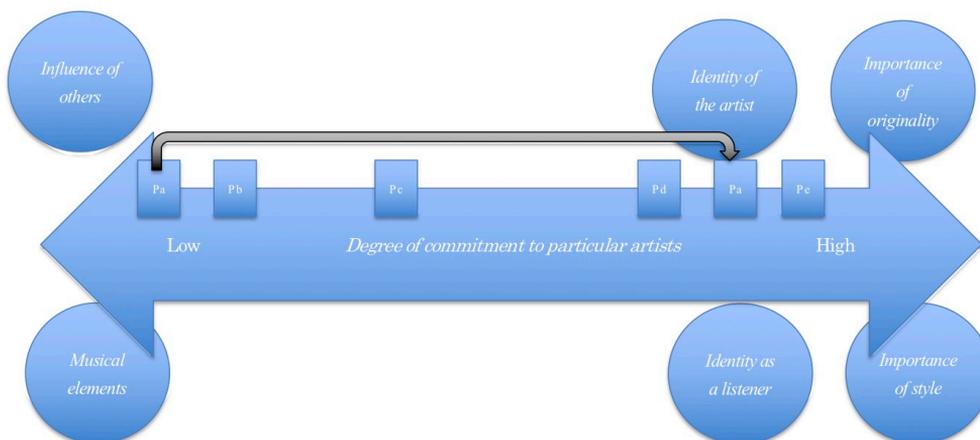


Figure 1. The degree of commitment to particular artists, and the reasons for selecting music. Core category is indicated in right and left arrow and italic text. Categories are indicated in circles and italic text. Black arrow indicates the change of the degree of commitment to particular artists within the participant; from low to high (P: Participant).

Degree of commitment to particular artists

This category shows the degree to which the participants stick to particular artists. Some participants reported a clear listening behavior in which they have two or three special artists to whom they are especially attracted. Although their favorite artists are not limited to only two or three artists, they clearly differentiated their special artists from others. This tendency was seen in the musicians and non-musicians. These participants exhibited the common tendency to become a big fan of these artists from particular listening experience.

Taylor Swift was the first artist whom I was crazy about. I hadn't listened to this type of music before, but when I first listened to her music, I suddenly felt "that is awesome!" After this experience, I continued to stick to Taylor. She is special to me. (NM Participant 1)

Importance of originality

It was found that many participants, especially those who were committed to particular artists, emphasized on the originality of the musical piece and musical performance. One non-musician participant explained the originality of his favorite artist as follows.

I am fascinated by the individual artist's style of performing drum, they have their own sense of rhythm called "Grove." Such a performing style is really special and unique ... For example, my favorite artist Stephen Ray Vaughan has a fascinating Grove, which is only his Grove, no one can play like him. (NM Participant 2)

An interesting finding was that the participants who strongly emphasized on the originality in selecting music exhibited aversion to the artist's attitude that panders to that of the public.

He had been different from other artists. Although he wrote lyrics describing serious problems in the society, his melody is not that serious, it is cheerful. I had been attracted by this mismatch between lyrics and melody, which was the reason I select his music. We cannot find such an interesting style in other artists. However, he had changed his style after he started appearing on TV. His style changed according to the popular fancy. I prefer his previous style. (M Participant 5)

Identity of the artist

The participants who were committed to a particular artist expected the artists to show a unique identity. Firstly, the identity of the artist seemed to be perceived whether the artists performed by themselves in a live concert or on TV. This was evident in the answer to the question "what is the difference between artist and idol?" The participants did not accept the lip-synching that is often seen in the idols' singing in a live concert and on TV. Along with the artists' own performance, the participants suggested that the artists' identity should be unfolded only by the "music."

The attitude of the artist in challenging new styles is also an important component of the identity of artist.

My favorite artist *Ikimonogakari* always write their own songs, and when I realized the emergence of new aspects in their songs, I thought that they are now challenging new things. (NM Participant 5)

Identity as a listener

The participants who showed a strong preference to a particular artist not only expected the artist's unique identity but also established their own identity as a listener. NM Participant 3 reported his experience that although his selection of music had been strongly influenced by his brothers and father, he gradually established his own musical preference.

Another non-musician participant clearly explained that her musical identity was established when she was a junior high school student.

At the junior high school, my selection of music became focused. I started thinking that the music that I think good is good, irrespective of if it is not popular among the public. Since then, I did not listen to hit songs. When I became a high school student, I had become more indifferent to other people. I could realize where I was standing. (NM Participant 5)

It was interesting that one non-musician explained her sincere feeling to the artists, by which she might establish her identity as a listener. It seemed that she not only assigned a special position for her favorite artist, but also put herself on a special position that is different from others. For example, she explained that when she found attractive aspects in her favorite artist, that feeling was not the same as ordinary fans.

May be this is my pride...I began thinking that my opinion of "(This music is) good" is deep. It's totally different from other's "good." My "good" is not that shallow... (NM Participant 1)

This idea was also reflected in her motivation to buy CDs of her favorite artists. When we buy CDs of our favorite artists, I think the person who sincerely loves that artist can buy the CD. The people who "just" like the artist are not allowed to buy the CD of that artist. So I only buy the CD of my favorite two artists, and don't buy other artist's CDs. Because I feel sorry about the artists and their sincere fans. (NM Participant 1)

Importance of style

Although the participants who are drawn in by particular artists seemed to be strongly attracted by the artists' originality, they were not indifferent to the importance of the traditional performance style. Both musicians and non-musicians commented on the importance of the traditional performance style. One non-musician participant suggested the importance of tradition when listening to the performance of his favorite guitarist.

I like the performance that accepted the legacy of the traditional style, and at the same time possess the artist's own style...I don't reject the modern performance, but I am attracted more to the performance that incorporated the old tradition and created the new. (NM Participant 2)

Influence of others

It was clarified that the participants' selection of music was often influenced by other people such as parents, brothers and sisters, friends, teachers, and the public. Non-musician Participant 6 said that she often listened to music, in the car, with her mother. Therefore, her mother and her musical preference became similar. She often visited the CD rental shop with her mother and saved musical pieces on the PC folder that was common to her mother's preference.

Several musician participants showed a strong influence of their teachers. For example, Musician Participant 5 repeatedly explained that the reason for listening to famous flutist Rampal's performance was the influence of her teacher.

Musical elements

Variety of musical reasons for selecting music emerged; which were broadly divided into melody and mood of music. Many participants pointed out melody as one of the most impressive musical aspects that attracts them. An interesting answer was that they were sometimes attracted by just one impressive phrase of melody, which became the reason for selecting a particular music. On the other hand, the general mood of the music, such as "slow pieces like a Ballad," "a lyrical performance," and "an atmosphere created by certain tonality," also seemed to attract the participants. It

seemed that participants were attracted by partial characteristics as well as the holistic characteristics of musical pieces.

Discussion

The results showed that the different types of musical selection styles were evident from the degree of commitment to particular artists. While some participants exhibited this commitment, others did not. As shown in Figure 1, the different types of participants might be positioned somewhere between a low and high degree of commitment to a particular artist. Furthermore, such different degrees of commitment can be seen not only between the participants, but also as a process from low to high degree of commitment, which occurred within each participant. Specifically, some participants reported that they had not had special preferences to particular artists, but became focused on a particular artist with age.

An interesting finding is that reasons for selecting music seemed broadly related to the degree of commitment to a particular artist. As shown in Figure 1, the categories related to the reasons for selecting music can be positioned somewhere in the core category that spread from a low to high degree of commitment. For example, the *importance of originality*, *identity of the artist*, *identity as a listener*, and *importance of style* is positioned on the right side of the continuum, where the degree of selecting a particular artist is high. On the other hand, the categories such as *influence of others* and *musical elements* are positioned in the left side, where the degree of commitment is low. As expected, the participants with a high degree of commitment showed a strong attraction to the artist's musical originality. The important finding was that the participants were clearly aware that what kind of originality they were attracted to. Surprisingly, non-musicians as well as musicians could describe the artists' originality in a knowledgeable way.

Another interesting aspect of the participants with a high degree of commitment was that some participants were not only knowledgeable about their favorite artist but also established a firm identity as a listener. One non-musician participant seemed to have a high sense of pride in being a fan of her favorite artist. She expected the artist to demonstrate a strong identity and was simultaneously trying to keep her self-respect as a fan of her favorite artist.

While participants with a high degree of commitment possessed a firm identity as a listener, those with a low degree of commitment were influenced by others in

selecting music. It was revealed that even the musician participants were strongly influenced by others, such as their teachers and the public.

Along with the influence of others, musical elements were also the main reasons for selecting favorite music for the participants whose degree of commitment to a particular artist was low. Although musical elements, such as melody and mood of music, were pointed out as the reasons for selecting musical products, these elements did not seem to be the reasons for selecting particular artists.

It was interesting that both non-musician and musician participants suggested the importance of tradition. Although the idea of originality and tradition are in conflict with each other, the participants who showed a high degree of commitment suggested that these two qualities were important reasons for selecting music. This finding is consistent to the study presented in the introduction (Mito, 2015; 2019). In Mito's study, many professional musicians who participated in the interviews considered originality as one of the most important factors in determining the value of a performance. They strongly suggested that attempting to express oneself authentically was indispensable for a musical performance. At the same time, the musicians also stated that genuine expression, which impressed the audiences, was built into the framework of traditional performance styles that musicians in the same culture share among themselves.

Although most of the participants in this study did not use the word "creativity" when they evaluated a musical product, the results indicated that non-musicians as well as musicians unconsciously sought creativity in the musical products of their favorite artists. Although only a few participants possessed a clear idea of the importance of tradition and originality, it must be a significant finding that even the participant without formal musical training clearly expressed the idea that can be interpreted in the framework of creativity.

In the 21st century, creativity is one of the most important issues in education. In music education, however, the development of creativity has mostly been discussed in the formal education context. This study showed the possibility that the development of creativity in music can happen in the informal education context as well as in the formal education context.

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Analysis of Titles and Author Affiliation of ISME Research Commission Manuscripts

Evelyn K. Orman¹, Ana Lucia Frega²

¹University of North Carolina at Charlotte, USA

²Fundación UADE, Argentina

Abstract

This descriptive study reports on an analysis of the titles ($N = 636$) and authors ($N = 1012$) of published research papers presented at the 1st through the 27th International Society for Music Education Research Seminars held from 1968 through 2018. We considered global impact based on citations and the number of times countries or specific global regions are mentioned in titles, and the country affiliation of authors. We further examined each of the 7,348 individual words contained in the published paper titles. Data showed a chronological shift from sole to multiple author manuscripts as well as an increase in the number of words used in titles (ranging from 2 to 31). Citations ($N = 8,397$), number of countries ($N = 158$) and global regions ($N = 40$) mentioned in the titles, and country affiliation of authors ($N = 47$) represent a strong global impact that is continually expanding. Substantive keywords used in at least two or more titles align well with the founding principles and purposes of the commission. Perhaps the most salient finding is the manner in which the collective data in this study supports and reinforces the extraordinary aspirations and intent of the International Society for Music Education Research Commission from 1968 to the present showing the past, present and future necessity of this unique part of the International Society for Music Education organization.

Keywords: author, title, research.

Introduction

The International Society for Music Education (ISME) Research Commission (RC) originated from a discussion among three music research scholars, Arnold Bentley, James Carlsen and Bengt Franzen in 1967 (Bentley, 1982). Since most music education research at that time was conducted by individuals in relative isolation, the three proposed a fully residential international meeting of invited music education

researchers lasting about seven days, conducted in English, and limited to about 25 individuals so it could be organized in the form of a working party. All manuscripts were distributed in advance of the meeting so participants arrived having fully read all papers for presentation. Due to this advance preparation and the working nature of the seminar, papers were “critically discussed in research group meetings, with particular, if sometimes uncomfortable, advantage to the authors” (Bentley, 1970, p. 1). The first meeting held in July 1968 in Reading, England was called an *International Seminar on Experimental Research in Music Education* (Bentley, 1969; 1982). Beginning with the second meeting under the auspices of the ISME, the word *experimental* was omitted as, the seminar began and continues to welcome research comprised of all methodological approaches (Bentley, 1982; Carlsen, 1977).

Policy changes at the second seminar included establishing the seminar as the ISME RC, adopting an executive committee (now commissioners) on a six-year rotating system with those retiring being replaced by new individuals every two years, and reaffirming the seminar would be a small working group of about 25 participants so as not to become a “paper-reading conference to an audience that is (apart from compulsive questioners!) largely silent” (Bärenreiter, 1973, p. 10). Attendance for this meeting, was sparse likely due to the lateness of the invitation, as several members were unable to attend (Bärenreiter, 1973).

Beginning with the Seventh International Seminar on Research in Music Education in 1978, a call inviting the submission of papers was distributed. This was a change from the previous practice of inviting researchers to present a paper. Papers for presentation in 1976 were selected based on geographic representation and quality of the manuscript. This practice “proved to be an effective procedure” that was continued (Carlsen, 1979, p. iii; 1989). This same procedure continues today as the call for papers are distributed with the goal of accepting about 25 papers based on geographic representation, the quality of the manuscripts (International Society for Music Education, 2016) and inviting new individuals who have not previously participated in the seminar. International seminars of any kind must always contend with the difficulty of various primary and in many cases secondary languages. In 1976, the ISME RC revisited the decision in 1968 that the seminars be conducted in English and decided the practice would continue “in order to facilitate the most effective exchange of ideas” (Carlsen, 1977, p. 4).

By 1992, the commission reported past presentations of experimental, historical, philosophical, ethnographic, comparative methods, and computer science research

with the requirement being that each of the selected papers identify a “hypothesis concerning some dimension of music teaching or learning which is then tested through methodology appropriate to the particular research area” (Fiske, 1992, p. 10). The acceptance of papers representing expanded methodological research approaches continues to the present, most notably but not exclusively, with the addition of descriptive and various qualitative procedures of inquiry. In this manner, the ISME RC is inclusive of all research types and topics. It does not focus on or represent any one topical area as do the other commissions, forums, and special interest groups within the overall ISME organization.

The most recent meeting of the ISME RC held in Dubai, United Arab Emirates marked 50 years since the first meeting in 1968 and was held incorporating the same procedures as followed for much of the commission’s history (Orman & Frega, 2018). An addition to this seminar was the first occurrence of submissions invited and accepted for poster presentations that included a 5-minute public address. One paper accepted for poster and presented entitled, “The seeds of the ‘International Seminar on Experimental Research in Music Education’ Reading, UK, July 1968” ended with the statement “Good seeds, good start, long life” (Frega, 2019). That conclusion prompted many discussions of various ways the impact of the ISME RC could be examined from a research perspective. One of those conversations led to considering the titles of all the manuscripts presented during the 50-year history of the ISME RC.

A title should summarize the main idea of the manuscript simply and, if possible, with style. It should be a concise statement of the main topic and should identify the variable or theoretical issues under investigation and the relationship between them. (American Psychological Association, 2010, p. 23)

Given this, several researchers (Bird & Knight, 1975; Buxton & Meadows, 1977; Diener, 1984; Tocatlian, 1970) have studied the content of research manuscript titles. A necessary methodological approach to this type of research involves identifying and eliminating non-substantive (Tocatlian, 1970) or non-keywords (Bird & Knight, 1975) defined as words that convey little to no meaning when considered individually. Through the truncated word lists generated from this process researchers have determined discipline specific content changes through time.

Our chronological collection of manuscript titles also included authors and the country of their affiliation at the time of their manuscript presentation and publication.

Therefore, knowing the historical reasons for the establishment of, and changes to, the ISME RC and having title, author(s) name(s), and author(s) geographic affiliation our three research questions became:

1. What information regarding global reach or impact might be gained from a descriptive analysis of the titles and authors of published ISME RC manuscripts?
2. What information might be gained from a descriptive analysis of sole or multiple authorship?
3. What knowledge, will an analysis of the individual words that appear in the titles of published ISME RC manuscripts provide?

Methods

Using the descriptive method (McMillan & Schumacher, 2014) of inquiry (Stemler, 2001) we collected the table of contents from all ISME RC seminars. These were found in various publications including the *Journal of Research in Music Education*, the *Bulletin of the Council for Research in Music Education*, the *Canadian Journal of Music Education*, *Psychology of Music*, past RC programs, published conference proceedings, and most recently electronic publications on the ISME website. The year of publication, paper titles, authors, and country affiliation of all authors were entered into a table. An apparent trend from the authorship list was how many manuscripts were written by single or sole authors or were collaborative (authored by two or more individuals).

Several types of data were used to gauge the global reach of the seminars. First, we identified countries named in the manuscript titles and second, the country from which all authors resided at the time of their manuscript presentation and subsequent publication. When possible, this identification was taken from the listed author affiliation in the publication. For all others we relied on internet searches and the collective memory of some past attendees of the RC seminars. Using these methods, we were able to identify the country of affiliation for all but 4 (0.4%) of the 1,012 listed authors. Country affiliations were compared to those countries recognized in 1968 when the RC was established and those in or officially banned from the 1968 Olympic Games as the Olympics represent the largest and broadest global event in the history of the world (Tomlinson, 1996). It seemed reasonable to use these Olympic country listings for two reasons: (1) that was the state of the world when the RC established the goal of having a global reach, and (2) the total number of recognized countries

continually fluctuates, most often increasing from year to year so it was necessary to establish a single year of comparison. For our final data driven measure of global reach, we searched for all manuscript titles using Google Scholar [<https://scholar.google.com>] to determine the number of scholarly citations (Seglen, 1997; Stremersch et al., 2007; van Raan, 1998;) each manuscript has received.

In an effort to determine what information could be gleaned from the manuscript titles, all were analyzed using *Wordle*TM Version 0.2 build 1506 ©2014 by Jonathan Feinberg. This software application is available for free at wordle.net and is used to generate both visual “word clouds” (where the more frequently used words appear larger based on the percentage of occurrence) and lists with the exact number of occurrences of each word. Thus, we were able to visually ascertain the overall frequency and percentage of words used in the published RC manuscript titles.

After generating the word list with frequency counts for the entire body of titles and for each individual seminar, duplicate words and words deemed unnecessary to analyze were removed. For example, we found no reason to analyze numbers or dates that appeared in titles. We also eliminated words that functioned as adverbs (e.g., when, within, why), adjectives, articles (e.g., a, and, the), conjunctions (e.g., or), prepositions (e.g., at, in, of, on, to), pronouns (e.g., it, its, which, who, whom) and proper nouns. We considered the remaining nouns defined as a person, place or thing that generally function as the subject, direct or indirect object of the sentence and verbs, which tell about an action or action state as the most important and informative words found in the titles. We then combined different forms of the same word (e.g., ability and abilities, accurate and accuracy, achievement and achievements). Finally, similar words and words found in synonym lists on thesarus.com (e.g., music and musical; teaching, instruction and training; achievement and acquisition) were grouped together. These decisions were made without considering the context and are subjective; however, the use of a published synonym list provides an external measure of both validity and reliability. Additionally, another researcher independently grouped 1167 (31.48%) of these words. Using the formula $\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100$ we obtained a reliability quotient of 97.5%.

Results

There have been 636 manuscripts presented at the last 27 ISME RC seminars. This represents an average of 23.56 ($SD = 5.02$) papers per seminar with a median and mode of 24 as 6 (25%) had 24 presented manuscripts. The least number of manuscripts ($n = 8$) was presented at the fifth seminar held in 1975. This was a special seminar (*Canadian Journal of Research in Music Education*, Vol 30, May 1989, pp. 7-13) and the only seminar held during an odd numbered year. This low of 8 was closely followed by 10 manuscripts presented at the second seminar held in 1970. The largest number of manuscripts at a single seminar was 29 in 2012.

Global reach or impact by title, author(s) and citations

Manuscript titles include country names 158 times and specific regions of the world are mentioned 40 times. Of these, 42 (21%) were unique countries or specific regions. We identified 47 different countries of affiliation for authors. This represents 29% of the number of sovereign countries recognized in 1960 and 38% of all countries that participated in or were banned from the 1968 Olympic Games. The 636 titles are cited 8,397 times in the scholarly literature according to *Google Scholar* (accessed October 2019), an average of 13.2 citations for each manuscript.

Sole and collaborative authorship

The 636 papers presented at the 1st through the 27th ISME RC seminars include 1,012 authors. Of these, 435 (43%) were sole authors. Manuscripts presented and published during the first third (9 years) of the ISME RC were overwhelmingly (91.56%) sole author research papers. The occurrence of sole author papers during the early years fluctuated very little ranging from 100% in 1968 and 1972 to a low of 87.5% in 1975. During the second 9 years this percentage decreased to 71.16% with a high of 87% in 1988 and a low of 57% in 2000. In the most recent 9 years, 47.36% of manuscripts were written by a single researcher with a high of 56% in 2018 and a low of 31% in 2014. Authorships for all manuscripts range from 1 to 11 per paper with an average of 2.04 authors per manuscript.

Number of words in manuscript titles

The average number of words for all ISME RC manuscript titles is 11.55 ($SD = 4.98$) ranging from 2 to 31 words per title. During the first 9 years of the seminar, titles averaged 9.41 words ($SD = 3.99$). In the next 9 years, this increased to an average of 11.77 ($SD = 5.11$) words per title. In the most recent 9 years, an average of 12.96 ($SD = 4.40$) words comprise each title.

Analyses of individual words used in manuscript titles

Collectively, RC manuscript titles ($N = 636$) from the 1st (1968) through the 27th (2018) seminar contain 7,348 words. After eliminating words expressed as numerals, acronyms expressed as words and combining individual words that convey a single place (e.g., United States, United Kingdom) there are 7,229 words consisting of 440 adjectives, 29 adverbs, 398 conjunctions, 583 determiners, 4,094 nouns, 51 numbers (expressed as words), 1,328 prepositions, 38 pronouns, and 268 verbs. We further eliminated words that only appeared once ($n = 4,030$; 55.75%), in all 636 titles as we were interested in identifying trends. The remaining words occurred from 2 to 538 times among all titles. The word "of" (a preposition) occurred most often ($n = 538$).

The elimination of words that only appeared once left a total 3,707 reoccurring nouns and verbs (nouns: $n = 3,316$; 89.45%; verbs: $n = 391$; 10.55%). Figure 1 displays a word cloud including all of the 3,707 reoccurring nouns and verbs. The larger the word appears visually, the more frequently it occurred. Conversely, the smaller the word appears, the less often it occurred throughout the manuscript titles.

After combining frequency counts for the same words, different forms of the same word, similar words, and synonyms (see examples in methodology) of the reoccurring nouns and verbs ($n = 3707$) there were 465 unique words comprised of 427 nouns and 38 verbs that occurred from 2 to 354 times across all titles. These unique words or word groupings that comprised 1 percent or more of these total occurrences are listed in Table 1. Individual words or word groupings are listed in the table with the exception of those identified as research terms. The following words were included under the Research Terms word grouping: analysis, effect, empirical, experimental, investigate, pilot, problem, range, reliability, replication, research, results, science, statistics, stimuli, study, survey, theory, validity, variability, variables, and variance.



Figure 1. Word cloud of all 3,707 reoccurring nouns and verbs from all 636 ISME RC manuscript titles.

Word or Word Group	<i>n</i>	Percentage
Music, Musical	354	9.55
Research Terms*	308	8.31
Education, Teaching, Instruction, Training	259	6.99
Children, Student, Pupil	171	4.61
Research, Study, Investigation	163	4.40
Development, Learning, Acquisition, Achievement	112	3.02
Age, Year	67	1.81
School, Class, Classroom	63	1.70
Perception	62	1.67
Abilities, Skills, Experience	59	1.59
Effect	56	1.51
Creativity, Composing	53	1.43
Vocal, Singing, Choral, Song	52	1.40
Performance	42	1.13

Table 1. Unique words or word groupings that comprised 1% or more of the reoccurring nouns and verbs in the RC manuscript titles.

Conclusion

The structure of the ISME RC has remained true to the founding principles of hosting about 25 invited papers per seminar for presentation based on both geographic representation and quality of research. At the most recent seminars, all papers are distributed in advance to be read by participants before the meeting. Discussions during the seminar not only center around the finding(s) of the research, but among other things include how the research was conducted, the appropriateness of the data and data collection procedures, the design and methodological approach taken, and how the particular findings relate to the global practice of music education. Logistically, the commission still uses a rotating structure of six commissioners where every two years two individuals join the commissioners for a six-year term replacing two who finish their term.

Chronologically, the ISME RC development by geographic representation began by first world countries largely in the northern hemisphere with the addition of Australia and New Zealand. Most if not all of these had English as a primary or secondary language. Representation then broadened to Latin America, Japan and Africa. This expansion continued and is still in progress. When author affiliation and countries or unique regions mentioned in manuscript titles are considered as a measure of the global reach, the data is quite remarkable given the organization has only met 27 times. Data revealed 42 countries or specific regions mentioned in titles and 47 different countries of affiliation for all authors. When evaluated against the total number of countries represented in ISME today ($N = 87$) with 32 of those having only one member, we find the research commission manuscript authors represent 54% of all countries in ISME, 85.45% of all those that presently have two or more members and 100% of the ten countries that comprise the highest membership participation in ISME (2019).

Interestingly, manuscript authorship has moved from 91.56% single author papers during the first 9 years (first one-third of the meetings) and at times 100% sole author papers for the early seminars to 52.64% of papers authored by 2 to 11 researchers in the last 9 years. This would likely be seen as an advantageous advancement given one of the reasons for the initial founding of the seminar in 1968, was that most music education research at that time was conducted by individuals in relative isolation (Bentley, 1970).

The length of manuscript titles steadily increased over time. The average length of titles (12.96%) in the last third (9 years) of the RC seminar exceeds the recommended

title length of 12 words by the American Psychological Association style manual, the guideline for all RC manuscripts during this time period. Overall 242 (37.93%) of the 638 papers presented at the ISME RC seminars have exceeded the recommended 12 words with a range of 2 to 31 words. It may be that this increase has occurred gradually and gone mostly unnoticed.

Given the focus of the International Society for Music Education (ISME) and the Research Commission (RC) seminars, we found the words and frequency of their use in titles of manuscripts prepared, presented and published adequately represent who we are and what we are about. As represented in Table 1, we are first and foremost a musical organization concerned with the education, teaching, instruction and training of children and students through research studies and investigations. Our interests include student development, learning, acquisition and achievement. Based on this data we are concerned with the age and year of these children and students found in schools, classes and classrooms. Our interests include perceptions, abilities, skills, experience most often related to creativity, composing, vocal singing and performance. When specific terms directly related to research are combined, we find our largest focus is music research with the word "effect" as the most often appearing individual research term. The authors of this manuscript believe overall this data demonstrates a very healthy synopsis of our oeuvre. "Good seeds, good start, long life" (Frega, 2018).

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Students' Perception of Piano Performance Gestures as of Age and Education Level: A Pilot Study

Efthymios Papatzikis ¹, Marianthi Tsavdaridou²

¹Department of Psychology, Canadian University Dubai, UAE

²Music Education Department, European University of Cyprus, Cyprus

Abstract

Communication is interwoven with every human activity. Gesture is a form of communication and it has a strong visual component in its framework. Gestures are integrated into the accompanying speech, but researchers have also found that gestures carry information that is not conveyed in speech. Information conveyed exclusively by gestures can facilitate thinking and understanding for both children and adults in a wide range of subjects, including activities in music education. Following a broader investigation on the use, understanding and efficiency of gestures in the music education process, the purpose of this particular study was to investigate 18 (corrected sample) music students' perception of certain performance gestures on a classical music instrument (piano), implementing a test-retest data collection process (three trials), and accounting the role of age and level of education for the profile of the results. The findings aimed to address whether or not someone should use multiple age classes to clarify the effectiveness of gestures in music education, or simply, if studying a specific age range will produce the same valid result. Using descriptive statistics and non-parametric statistical models (Friedman's ANOVA and Kruskal-Wallis One-Way ANOVA) the collected data were analysed, resulting in rejecting the null hypothesis saying that "when age or age group is considered, music students do not perceive in the same way the gestures a pianist applies in performing a musical piece".

Keywords: non-verbal communication, gestures, music education.

Introduction

Communication is interwoven with every human activity, being defined as "the mechanism through which human relations exist and develop" (Cooley, 1909). Smith (1979) contemplates communication in terms such as behavior, talking, use of

language, interaction, information, signs and symbols. Researchers have dealt with the various functions of communication that accompany human activity such as complementing, enhancing, or regulating verbal communication through non-verbal communication (Ekman & Friesen, 1969), revealing emotional states, highlighting different aspects of personality (Exline et al., 1975) as well as the manifestation of preferences, dislikes for particular persons, situations, or ideas (Mehrabian, 1972). Petrovsky (1990) writes about the need for collaborative activity that develops communication in three ways: speech, senses and interaction, whereas in this perspective, Winkin (1993) concludes that communication is a continuous social process that involves multiple modes of behavior, such as reason, motions, gaze and interpersonal space.

Holistic communication, according to Richmond et al. (1991) is achieved by transmitting the cognitive part through the verbal path and the emotional or affecting part of the communication through the non-verbal path. Similarly, LeBaron et al. (2003) divide human communication into two levels: content level and relationship level. The first relates mainly to verbal communication and the second to non-verbal communication. Nonverbal communication precedes and is likely to structure all subsequent communication (Harrison & Crouch, 1975), as nonverbal symbols are ubiquitous, even if we tend to use verbal modes of communication in important circumstances (Smith, 1979). Research on nonverbal communication focuses on body language, facial expressions, gestures, postures, movements, vocal cues, attire, physical appearance, and patterns of behavior present in interpersonal interactions (Badad, 2007).

In interpersonal relationships, nonverbal communication, including all expressive aspects that do not include speech, words, spoken or written language, carries messages and concepts expressed with body language, facial expressions, postures, movements, attire, gestures (Badad, 2007), touch and eye contact (Wang, 2009). The “gestures”, according to Roth (2001), are an essential component of human cognition and the most widespread element of human communication in all cultures. But what is gesture, how is it used and what role does it play?

What gesture is

Gesture is a form of communication that has a strong visual component but, unlike a map or diagram, is transient and disappears as rapidly as reason (Goldin-Meadow, 1993). It does, however, have one advantage, it is integrated into the accompanying

speech and, as Mayer and Anderson (1991) pointed out, it is important for visual information to last as long as it can be effective.

Gesture is found in all forms of relationships that people develop in societies, including the world of education (Goldin-Meadow, 2004). Teachers produce gestures that can have an impact on what their students learn from a lesson.

Researchers have found that gestures carry information that is not conveyed in speech (Kang, 2012). Information conveyed exclusively by gestures can facilitate thinking and understanding for both children and adults in a wide range of subjects such as mathematics (Alibali & DiRusso, 1999; Church & Goldin-Meadow, 1986), understanding history (Beattie & Shovelton, 1999), problem solving (McGregor et al., 2009) as well as in medicine (Crowder, 1996).

Learning and gestures

But how can gestures make learning easier? The two different theories that exist include the idea that gestures can help by regulating and intensifying children's attention during a task (for example see Bangerter, 2004 ; Vallotton et al., 2015) and can provide relevant conceptual information through their representative content; particularly strategies/methods that include observation and action to perform a task (Zukow-Goldring, 2006; Vallotton et al., 2015). That is, they provide a representation of visual information that is more difficult to convey in speech.

Gestures in music education

In the field of music education, Mikumo (1994) investigated memory of melodies using auditory strategies (retaining in memory by humming or singing vocally or sub-vocally), visual strategies (imaging contours) and motor strategies (by tapping fingers as if playing the melody notes on a keyboard). The result of this experimental study showed that images of the gestures students perceive from their teachers enhance the memory of the musical construct.

Music imagery studies have also emphasized the essential role of gestures' mental images in activating and connecting gesture image to musical sound. Specifically, researchers have reported that: "there are associations that link musical sounds to other modalities, such as vision, various motor related sensations or to more general emotional images" (Godøy & Jørgensen, 2001, p. 3). This evidence relates

perception of music to imagined or real actions, bringing to the fore this important point of a mutual correspondence between perception and action.

Learning a musical instrument requires knowledge of the relationship between the movement required to handle it and the acoustic effects of that movement (Maes et al., 2014). This knowledge occurs gradually over the long period of a person's music education and their specialization in a musical instrument (Hommel, 2003). Expanding on this topic, Simones (2017) emphasized the direct involvement of a teacher's gestures in studying the performance of a musical instrument, which as an aid in understanding the musical concepts and practical knowledge needed to perform a piece. Through her investigations, Simones goes further into the field of education, concluding that gestures are an essential communicative element of the teaching and learning process. The teachers' gestures in performance practice provide students with an understanding of the movement that must be performed in terms of trajectory, direction, and intensity in order to achieve the desired sound quality (Leman & Godøy, 2010).

Aim, research questions and hypothesis

The purpose of this investigation was to study music students' perception of certain performance gestures on a classical instrument (piano), following a test-retest data collection framework (three trials), and accounting the role of age and level of education for the profile of results. The findings aimed to address whether or not someone should use multiple age classes to clarify the effectiveness of gestures in music education, or simply, if studying a specific age range will produce the same valid result. The content described in this article fulfils a part of a broader investigation on the use and understanding of gestures in the music education process.

Our research questions in this particular study were as follows:

- Is there a within-subjects perception differentiation on the gestures' number per trial?
- Is there a between-subjects gestures perception differentiation when age and educational level are accounted for?

The particular study is based on the hypothesis that students, when their age or age group is considered, do not perceive in the same way the gestures a pianist applies in performing a musical piece. We assume that differentiations in perception are due to the level of education differentiations that come along with the particular age class or range.

Method

Sample profile

The final sample in this research consisted of piano students ($N = 18$), all studying at the Varvoutio Municipal Conservatory of Ptolemaida. Their selection was random, coming from the general piano population of the conservatory. The only corrected criteria considered for participation in the final sample were their age (8 to 15 years) as well as their previous experience in playing the piano; that is a two-year minimum duration of piano studies within the context of a certified conservatory.

Design and data

The students were asked to watch a video three consecutive times. The video was showing a pianist performing a short musical piece: the Turkish March by W.A. Mozart (Piano Sonata No. 11 in A Major, K. 331 "Turkish March": III. Alla Turca – Allegretto). The question the students were asked to answer during each one of the repeated video presentations was as follows: "How many times is there a rapid upward movement of the pianist's hands over the piano keys?"

In order for the students to understand the gesture required to be acknowledged, the researchers illustrated it before the first video presentation. Specifically, one of the researchers mimicked the gesture on the piano and at the same time verbally described the movement (gesture) required to be acknowledged.

All trials were carried out in a quiet room using a laptop (15" screen display) with external speakers for clearer sound. The students watched the video individually, being alone in the room with one of the researchers. They were asked to note down on a blank piece of paper the gestures as they perceived them when occurring throughout the video (one vertical line for each perceived gesture). During this process, one of the researchers was present in the room, only to take care of any potential problems with the computer. The in-room researcher did not interfere in any way with the data collection process, maintaining a quiet environment, standing behind the students' visual field to avoid any perceptual distortions.

After all three video presentations (trials) were completed for each individual student, the in-room researcher collected the answer sheet, indicating a different way out in order to avoid communication of thoughts and results with the remaining participants. After collecting the answer sheets from all 18 participants, all the answers

were counted and coded in a Microsoft Excel spreadsheet for further statistical calculations and analysis (Table 1).

ID code	Age	1st trial	2nd trial	3rd trial	Level	Average
1	8	15	15	15	1	15.00
2	8	20	21	22	1	21.00
3	9	14	16	19	1	16.33
4	9	15	16	17	1	16
5	9	22	21	21	1	21.33
6	9	19	19	19	1	19
7	11	22	22	22	2	22
8	11	23	27	25	1	25
9	12	23	22	23	2	22.66
10	12	20	20	22	2	20.66
11	12	24	21	21	2	22
12	12	20	20	20	1	20
13	13	21	21	20	3	20.66
14	14	24	26	25	3	25
15	14	21	20	20	3	20.33
16	14	22	19	19	3	20
17	15	24	22	20	1	22
18	15	21	22	23	2	22
	Mean	20.55	20.55	20.72		
	Standard Error	0.72	0.71	0.59		
	Median	21	21	20.5		
	Mode	20	21	20		
	SD	3.09	3.05	2.53		
	Sample Variance	9.55	9.32	6.44		

Table 1. Data and descriptive statistics.

Sample correction and data analysis

The originally gathered sample consisted of 25 students aged 8-15 years, varying from complete beginners to quite advanced ones. Initial measurements and statistical analysis showed that there were distinctive outliers of perceived gestures in students who had a minimum piano training (< 2 years of piano performance training), no matter their age. The measurements of these children were subtracted (minus seven participants) from the original sample, correcting therefore the final sample ($N = 18$) for homogeneity.

As the final sample was not high enough to study each age separately in terms of gestures perception and level of study, the researchers decided to split participants into two main groups following the model 'children (8-11) vs adolescents (12-15 years)'. This separation was based on Piaget's (1929) basic theory of cognitive growth. This theory has been further supported by many contemporary scholars (Fischer & Bidell, 2006; Gardner, 2006) and suggests that children move through distinctive stages of mental development. Piaget's theory focuses not only on understanding how children acquire knowledge, but also on understanding the nature of knowledge and intelligence. The stages are:

Sensorimotor stage: birth to 2 years.

Preoperational stage: ages 2 to 7.

Concrete operational stage: ages 7 to 11.

Formal operational stage: ages 12 and up.

The last two operational stages were used for grouping our sample.

Results

At a first glance, the 18 participants' performance (correct answers) seemed not fluctuating much, even when considering their educational level or age. Following a descriptive statistical analysis, the value of mean performance showed to be rather high, varying just over 20 units in all three trials ($M = 20.55$ for the first and second trials, $M = 20.72$ for the third trial). The median for both the first and second trials was 21, whereas, for the third trial the epicenter of the dataset's tendency was decreased by 0.5 units. The most raised frequency value as expressed by mode was 20 units in the first and third trials, and 21 in the second one. Standard deviation showed that dispersion of resulting values was very close for the first and second trials (i.e., ± 3.09 and ± 3.05 units respectively), however having a significantly lower number (i.e., ± 2.54

units) for the third trial. In terms of reliably performing the particular tri-repeated task of gestures recognition (three trials; test-retest reliability) the sample showcased a high value of intraclass correlation coefficient (ICC) reaching the value of 0.82. ICC describes how strongly answering units in the same group resemble each other and is used instead of Pearson's correlation due to an excessive number of raters (>2) (Koch, 1982).

Having tested the sample's tendency and reliability of responses, calculations moved forward to try and answer the specific research questions. The researchers embarked to apply a General Linear Model (GLM) of analysis (within- and between-subjects factorial analysis; mixed ANOVA) finding out however that the sample did not satisfy the assumption of normality in one of the trials. According to the Shapiro-Wilk test, the p -value was less than the significance level ($p = 0.05$) for the first trial ($p = 0.01$), showing that the data significantly deviate from a desired normal distribution. This was not the case for the second and third trials ($p = 0.15$ and $p = 0.64$, respectively) as also graphically shown in the presented QQ Plots (Figure 1).

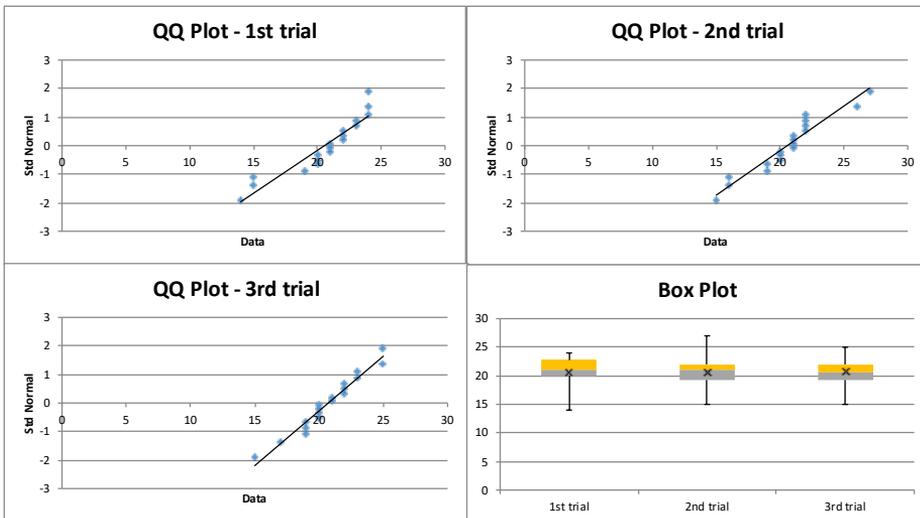


Figure 1. Descriptive statistics on collected data and standard deviation.

Based on the positively skewed, non-normally distributed findings, the researchers continued by using non-parametric statistical tests. More specifically, to answer the first research question, a Friedman's ANOVA was used to test whether perception differentiation on the reported gestures per trial exist for each one of the students within the specific sample. The test indicated that ratings on gestures did not varied significantly across the three trials, $\chi^2 = .286$, $df = 2$, $p = .867$.

For the second research question, the researchers used the Kruskal-Wallis One-Way ANOVA, testing for any significant differentiation on the reported results when "cognitive growth" (kids vs adolescents; 8-11 vs 12-15 y/o) considered as an age grouping variable. The results again indicated that there were no statistically significant differences between the number of gestures reported by the kids (Mean Rank = 7.75) and the adolescents (Mean Rank = 10.90), $H(1) = 1.568$, $df = 1$, $N = 18$, $p = .210$, Cohen's $f = \sqrt{\frac{0.092}{1-0.092}}$.

Conclusions

The results of the current study indicate that educational level does play a role on students' perception of performed gestures, showcasing a tendency for severe outliers during the first two years of piano training. Beyond this point, training seems to have no effect on the perception of gestures on this particular piece of music-technical standard, despite their age differentiation.

Interestingly, findings also revealed a large deviation for all participants on the number of gestures observed between the first and second trial. That was not the case for the second and third trials. The researchers suggest that this difference is due to a possible lack of concentration during the first trial, adjusting accordingly the cognitively load needed to perform better during the second and third trials. The fact that analyses projected the same non-statistical significance outcome for both the within- and the between-subjects calculations, brings a quite high level of certainty to the overall rejection of the initial hypothesis.

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Predictors of Songs' Tonal Achievement when Singing with Text and a Neutral Syllable

Ana Isabel Pereira¹, Helena Rodrigues²

¹CESEM-LAMCI, NOVA FCSH, Portugal

²Department of Musical Sciences, CESEM-LAMCI, NOVA FCSH, Portugal

Abstract

The purpose of this study was to investigate the influence of the use of singing voice, grade level, and gender on children's tonal achievement when singing with text and a neutral syllable. One hundred and thirty-five children from K4 to 4th grade, attending a city private school, participated in this investigation. The study encompassed two moments: during Moment One a song with text (Song A) and a song with a neutral syllable (Song B) were taught; during Moment Two the same two songs were taught with text (text was added to Song B). In addition, the Singing Voice Development Measure (SVDM) was administered both with text and a neutral syllable at the beginning of Moment One (before Songs' A and B instruction), and at the end of Moment Two (the end of instruction). Three independent raters scored songs' tonal achievement using two researcher-designed rating scales, as well as the use of singing voice using the SVDM. A multiple-regression analysis was conducted in both Moments One and Two. The models were significant, explaining 50% (Song A) and 46% (Song B) of the singing scores in Moment One, and 49% (Song A) and 45% (Song B) in Moment Two. In Moment One, results revealed that the use of singing voice with a neutral syllable is a common predictor of both songs' tonal scores. In addition, gender predicts Song's A scores (higher for girls), and grade level predicts Song's B tonal scores (higher for upper grade levels). In Moment Two, results revealed that all variables predict Song's A tonal scores (higher for girls, higher for older children, and higher for those with higher use of singing voice both with text and a neutral syllable). All variables except gender predict Song's B tonal scores. Implications for teaching practices may be made regarding the use of songs with text and a neutral syllable, as well as the use of singing voice. Children in kindergarten through elementary school ages (up to fourth grade) may benefit from classroom activities or singing techniques that prioritize the expansion of vocal registers, with an emphasis on the use of a neutral syllable. Similar results on tonal achievement might be expected for boys and girls if using songs presented with a neutral syllable. Considerations about the assessment process and the measurement tools used are also discussed.

Keywords: children's tonal achievement, songs with text and a neutral syllable, use of singing voice.

Introduction – background and aim

Several factors that might impact on children's singing have been investigated, such as accompaniment, age, attitude, pitch discrimination, gender, home environment, modeling, motor coordination, range, song literature, individual and group singing, text versus neutral syllable (e.g., Goetze, Cooper & Brown, 1990; Nichols, 2015; Phillips, 2014; Svec, 2015). Yet, the relationship between children's use of singing voice and their ability to sing accurately has received little study. In addition, results from previous studies have been inconsistent regarding whether children sing better with a neutral syllable and/or text. The goal of this research was to further explore the degree to which the use of singing voice and the way a song is taught contributes to children's singing performance, focusing on tonal achievement.

Children's use of singing voice

Rutkowski (1990) mentions that the use of singing voice should be considered an important requisite to the ability of accurate singing. In fact, Rutkowski (2015) and Pereira and Rodrigues (2019) have shown that children who were able to use more vocal registers have a tendency to sing a higher number of accurate pitches than other. These results suggest that helping children first to expand their vocal registers might be a useful approach when dealing with inaccurate singing (Pereira & Rodrigues, 2019; Rutkowski, 2015). The tool used in this research to measure the stages of children's singing-voice development (not singing accuracy) was the Singing Voice Development Measure (SVDM). It was developed, piloted, and implemented by Rutkowski (1990, 1996). The SVDM has shown to be a valid measure of children's use of singing voice with participants from the USA (e.g., Guerrini, 2006; Levinowitz et al., 1998; Runfola et al., 2012; Rutkowski & Miller, 2003), as well as participants from other countries (e.g., Mang, 2006; Pereira & Rodrigues, 2019; Rutkowski & Chen-Hafteck, 2001; Welch et al., 2011).

Singing with text or neutral syllable

To our knowledge, research involving the comparison between singing with text and a neutral syllable, as well as its influence on children's singing performance, is scarce. Furthermore, it has shown inconsistent results: better with a neutral syllable (Goetze, 1985); slightly better scores with a neutral syllable (Levinowitz, 1989); no significant

differences but better with a neutral syllable (Smale, 1987); no significant differences but slightly higher scores with text (Rutkowski, 1993); and significantly higher scores with text for the youngest group (Jacobi-Karna, 1996). However, comparison across studies is limited since different procedures and different musical material have been used. Moreover, the goal of the aforementioned studies was not to determine which instruction strategy is the most adequate to improve children's singing: if teaching first the melody with a neutral syllable adding the text later, or if the melody and text are presented together. This research will consider the use of both strategies.

Age and gender

Research on singing development has shown that accuracy improves with age (Geringer, 1983; Petzold, 1963; Welch et al., 1997; Yarbrough et al., 1991). A recent meta-analysis by Svec (2015) also demonstrated this trend. Moreover, Tsang et al. (2011) suggest that there is evidence that maturation factors related to age contribute to a better vocal performance, since improvements in memory capacities, motor and control skills can also be observed. Yet, the influence of singing with text or a neutral syllable regarding age has not been approached. On the other hand, concerning gender, research has shown mixed results concerning differences in singing accuracy. For example: no significant differences (e.g., Apfelstadt, 1984; Leighton & Lamont, 2006; Moore, 1994; Paney & Kay, 2015; Welch et al., 1995/1996); girls sing more accurately than boys (Goetze & Horii, 1989; Green, 1994; Mang, 2006; Trollinger, 2003; Yarbrough et al., 1991). Svec's (2015) meta-analysis also revealed that singing instruction was approximately as effective for boys as it was for girls. However, instruction had the greatest effect on girls. Svec (2015) also supports the idea that conflicting results on gender may be attributed to other variables, such as the student attitude towards the teacher or social pressures. In addition, Welch et al. (2012) suggest that boys can be as successful as girls from the same age if appropriate educational experience is provided.

Assessing song's vocal performances

The assessment of singing behaviors has involved different tasks (e.g., song singing, pattern, intervals, pitch matching) and has mainly focused on pitch accuracy (accurate versus not accurate). However, the use of rating scales seems to be more adequate since it enhances the opportunity to provide relevant sequential instruction, thus

helping students to achieve the objective (Gordon, 2002). On the other hand, since these scales might include different dimensions (Tonal: Jordan-DeCarbo, 1982; Feierabend as cited in Runfola & Etopio, 2009; Guilbault, 2004; Lange, 1999; Tonal and Rhythm: Gault, 2002; Levinowitz, 1989; Wolf as cited in Runfola & Etopio, 2009; Tonal, Rhythm, and Expression: Giga, 2005), they can contribute more effectively to assess children's song singing. It should be noted that although pitch accuracy is important on song's assessment, children might be able to sing accurately a tonic pattern, for example, although not in the provided key. This is relevant to consider especially if children do not access all their voice registers. Notwithstanding, there exist other features concerning rhythm (e.g., the ability to keep the beat along phrases) or expression (e.g., to demonstrate good articulation) that should be considered in performance.

The purpose of this study was to investigate the influence of the use of singing voice (as measured by the Singing Voice Development Measure – SVDM), grade level, and gender on children's tonal achievement when singing a song taught with text and song taught with a neutral syllable.

Method

Participants

Children aged 4 to 9 ($n = 135$; K4, $n = 22$; K5, $n = 19$; 1st grade: $n = 27$; 2nd grade: $n = 22$; 3rd grade: $n = 23$; 4th grade: $n = 22$; girls: $n = 72$; boys: $n = 63$) attending a city private school and belonging to families with medium/high income levels participated in this study. All children received music instruction from the same general music teacher once a week for 30 minutes in kindergarten and 60 minutes in first- to fourth- grades.

Material and procedures

The study encompassed two moments. Moment One corresponds to a period of five music classes and involved the teaching of a song with text (Song A) and a song with the neutral syllable "Bah" (Song B). Both songs were taught by immersion. At the beginning of Moment One, the Singing Voice Development Measure (SVDM) was administered by the music teacher. In preparation for administration, the children

practiced the patterns belonging to the SVDM criterion song in the classroom setting as a large group (a total of eight patterns with three pitches each; each pattern was one bar of notated music; see Rutkowski, 2015). The children echoed the patterns with text and also on a neutral syllable "Bah". For individual testing, each child was escorted to a private room at the school and her/his voice was recorded. The music teacher first established the key by playing a "D" using the tuning fork, sang the first pattern and then cued the child to echo-sing the pattern. The same procedure was continued for all eight patterns and was employed twice for each child since two response modes were considered, as recommended by Rutkowski (1990, 2015). In order to control the order effect, half of the children first echoed all of the patterns on text and then all of the patterns on the neutral syllable "Bah"; the other half of the children echoed the patterns on neutral syllable first. The average length of this data collection procedure was one minute and a half.

After five classes, each child was again escorted to a private room and her/his performances of Song A and Song B were audio recorded. To prompt the songs' performances, the music teacher first established the preparatory sequence, thus establishing meter, tonality, tempo, and finishing with the first pitch of the song, following the same procedure used in music class and already familiar to the children. The average length of this data collection procedure was one minute and a half. Moment Two followed Moment One. During a period of three music classes, Song A and Song B were taught with text (text was added to Song B). At the end of this period, each child was again escorted to a private room and her/his voice was recorded singing the SVDM patterns with text and with the neutral syllable "Bah", as well as the vocal performances of Song A and Song B. The number of recorded audios in Moment One was 135 for the patterns sang with a neutral syllable, 135 for the patterns sang with text, 135 for Song A, and 135 for Song B. The same number of recorded audios were collected in Moment Two.

Three independent raters – music teachers who work regularly with children belonging to the same grade levels as those who participated in this study - scored the randomized recording of children's vocal performances of Song A and Song B. For each song a researcher-designed rating scale was used (see Appendix). Both rating scales were additive and constructed with two dimensions: tonal and rhythm. Each dimension had five criteria, which was considered the optimum number (Gordon, 2002). A mark was given for each criterion achieved, thus the maximum of points for each dimension was 5 (five) and the minimum was 0 (zero). The combined rating of

both dimensions represents a child's total score for the vocal performance on each song. For the purpose of this investigation, only the tonal dimension was used for analysis. The same rating scales were used to assess the vocal performances in Moment One and Moment Two. To assess the use of singing voice according to the SVDM, three other independent raters evaluated the randomized recording of children's pattern singing with text and a neutral syllable "Bah". The raters first evaluated all the recordings for the use of singing voice with neutral syllable and then all the recordings for text. The highest score possible for use of singing voice was 5 according to the SVDM scoring system.

Results

In order to explore the influence of the use of the singing voice with text and neutral syllable, grade level and gender on children's tonal singing achievement, a multiple-regression analysis was used to test if those variables predicted children's tonal scores on both songs. The variables descriptive measures for both models (Songs A and B) in Moments One and Two are shown as follows (Table 1).

	Moment One		Moment Two		<i>n</i>
	Mean	Standard Deviation	Mean	Standard Deviation	
Song A tonal scores	2.84	1.80	3.12	1.85	135
Song B tonal scores	2.30	1.93	3.06	0.50	135
SVDM neutral syllable scores	4.08	0.91	4.27	0.81	135
SVDM text scores	4.04	0.90	4.28	0.80	135
Grade level	3.53	1.69	3.53	1.69	135
Gender	0.47	0.50	0.47	0.50	135

Table 1. Descriptive statistics of the variables entered into the models (Songs A and B) in Moment One and Moment Two.

Table 2 illustrates the results of the regression computed for each song's tonal scores in both Moments One and Two.

		Moment One		Moment Two	
	Variables	Beta		Variables	Beta
Song A	SVDM scores neutral syllable	0.46***		SVDM scores text	0.35***
	Gender	-0.19**		SVDM scores neutral syllable	0.32***
	SVDM scores text	0.19		Gender	-0.17**
	Grade level	0.10		Grade level	0.15*
		R ² adj = 0.49			R ² adj = 0.49
		F(4, 130) = 34.20			F(4, 130) = 33.20
<hr/>					
	Variables	Beta		Variables	Beta
Song B	SVDM scores neutral syllable	0.44***		SVDM scores neutral syllable	0.31***
	Grade level	0.27***		SVDM scores text	0.29**
	SVDM scores text	0.11		Grade level	0.27***
	Gender	-0.06		Gender	-0.07
		R ² adj = 0.46			R ² adj = 0.45
		F(4, 130) = 29.70			F(4, 130) = 28.40

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 2. Predictors of tonal scores of Songs A and B (multiple regression) in Moment One and Moment Two.

Moment One

For Song A, regression results indicated that the four predictors explained 49.80% of the variance and the model is significant, adjusted $R^2 = 0.49$, $F(4,130) = 34.2$, $p < .001$. It was found that Index SVDM neutral syllable, $t_{(135)} = 4.37$, $p < 0.001$, $\beta = 0.90$, and gender, $t_{(135)} = -3.08$, $p = 0.003$, $\beta = -0.69$, predict Song's A tonal scores. For Song B, the model explains 46.2% of the variation of the tonal scores of the song, and it is significant, adjusted $R^2 = 0.46$, $F(4,130) = 29.7$, $p < .001$. It was found that Index SVDM neutral syllable, $t_{(135)} = 4.12$, $p < 0.001$, $\beta = 0.94$, and grade level, $t_{(135)} = 3.91$, $p < 0.001$, $\beta = 0.31$, predict Song's B composite scores. There is one common predictor for both songs that most explain the scores obtained for the tonal performance on Songs A and B: the SVDM scores when singing on a neutral syllable. Looking at β values, the SVDM scores on neutral syllable show a positive value, indicating that children with higher scores on this variable are expected to have higher scores on the tonal achievement on both songs. In Song's A results, gender shows a negative value, indicating that after controlling the other predictors, the boys' scores will be lower than girls' scores in 0.69 points in a scale from 0 to 10 (in the dummy variable, the reference group are the girls; girls = 0 and boys = 1). For Song B, gender is not a significant predictor, meaning that

there is a tendency for similar results between boys and girls. Concerning grade level, this variable is not a significant predictor of Song's A tonal singing achievement. However, for Song B, grade level reveals a positive value, meaning that children belonging to the upper levels (in other words, older children) are expected to have higher scores in tonal scores.

Moment Two

For Song A, the regression results indicated that the four predictors explained 49.0% of the variance. The model is significant, adjusted $R^2 = 0.49$, $F(4,130) = 33.2$, $p < .001$. It was found that all the variables predict Song's A composite scores: Index SVDM neutral syllable, $t_{(135)} = 3.85$, $p < 0.001$, $\beta = 0.74$, Index SVDM text, $t_{(135)} = 4.18$, $p < 0.001$, $\beta = 0.89$, gender, $t_{(135)} = -2.71$, $p = 0.008$, $\beta = -0.63$, and grade level, $t_{(135)} = 2.35$, $p = 0.020$, $\beta = 0.16$. For Song B, the predictors explained 45.0% of the variation of the tonal scores' song. The model is significant, adjusted $R^2 = 0.45$, $F(4,130) = 28.4$, $p < .001$. The significant predictors are: Index SVDM neutral syllable, $t_{(135)} = 3.57$, $p < 0.001$, $\beta = 0.74$; Index SVDM text, $t_{(135)} = 3.35$, $p = 0.001$, $\beta = 0.70$; and grade level, $t_{(135)} = 4.11$, $p < 0.001$, $\beta = 0.31$. Looking at β values obtained in Song A, SVDM scores on text and neutral syllable reveal a positive value, indicating that children with higher scores on both variables are expected to have higher scores on both songs' tonal achievement. Moreover, the increase will be higher if they have higher scores when singing with text. On the other hand, the increase in Song's B tonal scores will be higher if children have higher scores on the SVDM when singing with a neutral syllable. Grade level is a significant predictor in both models. In both cases, children belonging to higher grade levels would be expected to achieve higher scores on both songs' tonal scores. As for gender, results show that it is a significant predictor for Song's A tonal scores. Since the β value for gender indicates a negative value, the boys' scores will be lower than girls' scores in 0.63 points in a scale from 0 to 10 (in the dummy variable, the reference group are the girls; girls = 0 and boys = 1). For Song B, gender is not a significant predictor, meaning that there is a tendency for similar results between boys and girls (as in Moment One).

Discussion and conclusions

The analysis presented here reveals that children's use of singing voice is related to their songs' tonal achievement. It was found that the SVDM neutral syllable scores are

a significant common predictor for both songs' tonal scores in both moments. This result highlights two aspects: (1) children who demonstrate a higher use of their singing voice with a neutral syllable will tend to perform better on the tonal dimension when singing a song; and (2) to measure children's use of singing voice and vocal accuracy separately is advisable (Rutkowski, 2015; Welch et al., 2011) since it can be helpful to "assess more than one aspect of children's vocal behavior in order to build a composite, rounded picture" (Welch et al., 2011, p. 16). Therefore, expanding children's usable registers using a neutral syllable will probably enhance songs' vocal performances. In both Moments One and Two, it is interesting to notice that gender is a significant predictor for Song A, where girls get higher scores than boys, but not for Song B. Thus, the song teaching strategy, that is, teaching a song starting with a neutral syllable or with text, is important when considering gender. In this case, Song B (the song that was first taught with a neutral syllable) contributed to diminish gender differences when comparing to Song A (the song taught with text from the beginning to the end of instruction). Regarding grade level, results revealed that this variable contributes significantly to the scores obtained in songs' tonal achievement. These results corroborate previous ones showing that the singing ability improves with age (Geringer, 1983; Welch et al., 1997; Svec, 2015). The only exception found concerns Song A (taught with text from the beginning of instruction), in Moment One, that is, differences found in scores are not predicted by grade level. Probably, teaching a song over time will have a stronger impact on older children's vocal performance. A final remark concerning the assessment process: the rating scales' criteria were designed to value children who do not yet access all the vocal registers but are able to perform a pattern or a phrase accurately even if transposing. They were designed to value the relation between pitches and not isolated pitches, especially regarding the criteria that assess accuracy on tonic and dominant patterns. The only rating scale's criterion that relates directly to pitch accuracy is the first one of both scales: 'first pitch is accurate, according to the auditory cue provide'.

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Appendix

Song's A rating scale: tonal dimension

- a. First pitch is accurate (according to the auditory cue provided) (bar 1)
- b. Tonic function pattern is accurate (bar 2)
- c. Dominant function pattern to tonic resolution are accurate (bars 7-8)
- d. Phrase a is accurate (bars 1-4)
- e. Phrase b is accurate (bars 5-8)

Song's B rating scale: tonal dimension

- a. First pitch is accurate (according to the auditory cue provided) (bar 1)
- b. Dominant-tonic interval is accurate (bar 7)

- c. Leading tone - tonic interval is accurate (anacrusis to bar 8)
- d. Phrase a is accurate (bars 1-4)
- d. Phrase b is accurate (bars 5-8)

Afro-Brazilian Culture in Higher Music Education: Analyses from a Trajectory of Exclusions and Epistemicides

Luis Ricardo Silva Queiroz

Department of Music Education, Federal University of Paraíba, Brazil

Abstract

Currently, researches have evidenced that music came to be institutionalized in Brazilian education owing to an intense process of colonization. These researchers claim this to be a reason why music teaching in higher education is still based on strategies created to teach Western classical music of the past. On the other hand, Brazilian ethnomusicology has produced a large body of knowledge about Afro-Brazilian music in the country. Such productions have evidenced the complexity of musical diversity that characterizes the Afro-Brazilian identity and how particular this music is. In this context, this presentation focuses on the results of a research project conducted on Brazil's higher education between 2016 and 2019. It investigated how Afro-Brazilian music has or has not dialogued and interacted with music teaching in higher education in the country. Based on a transdisciplinary theoretical approach and broad documentary research, this study dealt with the essential concepts of understanding the current reality of music in higher education by considering the trajectory of coloniality, epistemicides, and exclusions that have characterized the Afro-Brazilian culture. According to the findings, strong traits of coloniality still occupy a wide domain of classical music at this educational level. Consequently, other types of music knowledge, such as the one pertaining to Afro-Brazilians culture, continue being excluded from formal education. However, this study also pointed out the decolonial breaches and ruptures present both in the insertion of Afro-Brazilian musical knowledge and the incorporation of strategies related to the context of this music in some current music curricula.

Keywords: Afro-Brazilian music, Brazilian music education, undergraduate programs, Coloniality.

Introduction

Brazil is a diverse country and its culture came to be constituted from an intense blend of race, ethnicity, customs, and other cultural aspects in general. However, although diversity is found everywhere around Brazil, Brazilian society has been established

based on a complex process of both privileges of some classes and violent exclusions of others.

In this context, Afro-Brazilian culture occupies a controversial place in the country. On the one hand, it is considered such a rich feature that contributes to building a unique identity acknowledged as a cultural treasure of Brazil. On the other hand, black people and their cultural expressions have been relegated to subordination by suffering violent processes of discrimination and exclusion throughout the history of Brazil.

Among other aspects, this trend has impacted the presence of black people and their culture in Brazilian higher education in two main aspects: (1) the low number of Afro-Brazilian at this educational level; (2) the exclusion of their knowledge and culture from the goals, contents, and other pedagogical aspects that characterize higher education. Though we have produced in different areas some research outcomes regarding Afro-Brazilian culture and its limited insertion in higher education, we do not have data and analyses related to the field of music in this context.

Taking this feature into consideration, this paper analyses the outcomes of a research study conducted in Brazilian music higher education. The inquiry approach aims to understand the interactions and dialogues that characterize the relationship between Afro-Brazilian music cultures and higher education in music in Brazil nowadays, considering the trajectory of exclusions that characterizes black people and their cultural traits around the country.

The theoretical framework

The analyses carried out throughout this paper are based on four main concepts briefly discussed here due to the limited size of this text. Thus, it considers (1) the new perspective and definitions of higher education in these days; (2) the nuances of coloniality and musical epistemicides as critical concepts to analyzing the Brazilian music higher education; (3) the framework of Afro-Brazilian culture e its inter-relationships with the music context in Brazil.

Higher education: Relevance and goal for a new century

Higher education covers “all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments that

are approved as institutions of higher education by the competent State authorities” (UNESCO, 1998). This educational level meets currently valuable responsibilities in professional formation and high-quality knowledge production. UNESCO also concedes that higher education, especially undergraduate and graduate courses, are essential references in providing “essential components of cultural and socioeconomic development of individuals, communities and nations” (UNESCO, 1998).

From such a perspective, designed in the political-educational setting and strengthened within the scope of intellectual debate among many fields of knowledge, higher education suffices to recall its relevance in a transforming world, tainted by inequality and constituted by cultural diversity. Thus, we arrive at the 21st century assured that:

Higher education itself is confronted therefore with formidable challenges and must proceed to the most radical change and renewal it has ever been required to undertake, so that our society, which is currently undergoing a profound crisis of values, can transcend mere economic considerations and incorporate deeper dimensions of morality and spirituality. (UNESCO, 1998)

Among the many challenges that emerge from this reality, there lies the incorporation of new curricula array, new knowledge forms and new ways to systematize and apply teaching methodologies in higher education, based on the cultural diversity of the various contexts of higher education in the world (Bansal, 2011; Campbell et al., 2016; Jones et al., 2019; Moore, 2017). This is the landscape surrounding this study, which focuses on the interactions and dialogues between higher education in music and the expressivity of Afro-Brazilian musical cultures.

The nuances of coloniality and musical epistemicides as critical concepts to analyzing the Brazilian music higher education

Coloniality “[...] names the underlying logic of the foundation and unfolding of Western civilization from the Renaissance to today of which historical colonialisms have been a constitutive, although downplayed, dimension (Mignolo, 2011, p. 2). Thus, coloniality is one of the mainstays of modernity, and its consequences are still a cultural pattern for/in colonized countries.

While the domination of Western European culture has been intense in various cultural expressions and fields of knowledge, this trait has been overly dominant in the field of music, especially concerning its institutionalization. The celebration of a few sets of music expressions composed in European countries, mainly from the

sixteenth century, has perpetuated thoughts and values, projecting Western classical music as the primary and most valuable music style in the world (Queiroz, 2017c).

The consequence of this process is that European classical music, and its derived musical expressions, equivocally became the “absolute culture” that, because of its colonial label of “noble art,” is still considered for many institutions and music teachers as the main type of music that deserves to be taught, studied, performed, and researched into formal schools of music worldwide. We cannot deny that there have been some advancements in institutional music teaching and learning and that other types of music have gained notoriety in this context, at least since the 1990s. However, we also need to recognize that European-centered music is still the main focus of formal music education in a large set of countries (Moore, 2017).

In this context, the concept of coloniality is vital to understand the music institutionalization process in Latin American countries. The hegemony of Western classical music has dominated the institutions of music to the detriment of other regional, national, and international music cultures. This fact, which represents the reality of music and several other artistic expressions, is directly related to the “massive and gigantic extermination of the natives”, their knowledge, and their artistic expressions. It is the result of the “cultural repression and the colonization of the imaginary” that have been imposed on Latin America since the European conquest (Quijano, 2010, pp. 22-24).

Afro-Brazilian culture and music in Brazil

The trade of Africans to Brazil as slaves constitutes the most remarkable part of the Brazilian history. Around four million Africans crossed the ocean and went to Brazil forced by the colonizers to serve as workers in plantations, farms, housework, among other jobs without any kind of right or benefit (Brasil, 2020a; Marquese, 2006). Although the terrible situation that Africans came across in Brazil, they spread out around the country their religious, food, dances, music, among other cultural traits. This set of features, which came from African and that have been blended in Brazil with other cultural influences, constituted and characterized cultural expression named, these days, Afro-Brazilian culture.

Derived from this general perspective, Afro-Brazilian music is a diverse concept that encompasses a large range of music expressions. It includes all types of music in Brazil, which has influences from different parts of Africa. It is created and performed

by black people and their descendants, but these days, also by a broad group of Brazilians who are involved in these kinds of cultural expressions (Lucas et al., 2016).

From an overview, Afro-Brazilian music and its influences are present in Brazilian culture in three different categories:

- The first one is named “Popular culture music”. It ranges a lot of musical genres and styles associated and produced by “subaltern” groups. It is the most prominent category in which there are a lot of black communities involved (Queiroz & Carmo, 2018).
- The second category is “Brazilian Popular Music”, which includes commercial and artistic popular music produced in Brazil by black, browns or even white composers and musicians in general (Sandroni, 2001). Indeed, this set of music expressions is the most well-known around and abroad Brazil.
- The third one is “Brazilian Classical Music”, which encompasses a set of compositions, especially from Brazilian nationalism (the end of 19th century) till the contemporaneity, which incorporates Afro-Brazilian elements into classical repertoires. Although the influences of some black musical references, this music is composed and performed fundamentally by white musicians, without relation with black communities and black movements around the country (Andrade, 1991).

So, one way or another, the fact is that Afro-Brazilian music is very prominent in Brazilian culture as a whole, in spite of the social issues that characterize the history of black people around the country (Lucas et al., 2016).

The research context

Higher music education in Brazil

Brazil has a consolidated system of higher music education (Queiroz & Figueiredo, 2016). The outcomes of this research evidences that the country counts with undergraduate programs in music in all states and graduate programs that, although quantitatively limited, are spread out over four (South, Southeast, Mid-West, and Northeast) among the five Brazilian regions. Higher education, in general, has gotten a robust investment in Brazil over the decade of the 2000s. In the area of music, it represented a rapid growth with the creation of new undergraduate and graduate

programs, the widening of spots in programs already existent, and the inclusion of undergraduate programs into developing cities and countryside.

From this process, the results of this research project show that Brazil offers nowadays 89 Bachelor's degrees in music, encompassing programs in music instrument, vocal performance, composition, and conducting; 134 music teacher education programs; 23 masters's degrees and 14 Ph.D. in music. If these numbers might sound restrictive considering the size of Brazil, they are so representative if we dive into data of this reality until the 1990s (Queiroz & Figueiredo, 2016).

Meantime, although higher music education is an extensive and strong educational level in Brazil, music education research has not, proportionally, invested so much effort to study in depth this context. Specially, the findings of a large literature review reveal that the production related to diversity in general and Afro-Brazilian culture in specific, into undergraduate and graduate programs in Brazil, is still incipient. It implies that, although diversity and equity is presented in Brazilian Music Education literature as an important epistemological and practical mainstay for music teaching (Queiroz, 2015, 2016, 2017a, 2017b) professional and deep studies on this reality are still superficial (Queiroz, 2017c).

The research production on Brazilian higher music education: The main feature of music literature

The studies on higher music education in Brazil have grown progressively since 1990s. However, according to this study, the music education production in the main Brazilian Journals in the field of music, from 1990 to 2018, represents around 7% of the texts published on music education. Although it can be considered proportional taking into account the amplitude of Brazilian music education, it is a low number in comparison to the size of higher education and its relevance in the field of music around the country.

Considering this reality and aiming to understand findings, advancements, and limitations of the studies and publications produced on higher music education in Brazil, a glimpse of the current national literature published in qualified academic journals of music, books, theses and dissertations from the past twelve years were analyzed over the research project.

The analyses evidenced that although the interest and production on higher music education are increasing and that it has advanced on some reflections and discussion related to important aspects of this education level, the body of knowledge

produced is still limited. Specially, the literature review emphasizes the exclusions and coloniality which marked the institutionalization of music in formal education in Brazil has been completely neglected in music education research. Taking this reality into consideration, this study aimed to start filling a gap of knowledge about higher education in music, and this will foster advances in relevant issues concerning the matter.

The new reality for Afro-Brazilian and African knowledge in Education

Recognizing that we have a trajectory of exclusions and epistemicides of Afro-Brazilians and their knowledge, Brazil has promoted so many debates and reflections on this topic and created specific laws as well as cultural and educational policies to face and try to surpass this terrible social ill that has been building since colonization. Thus, especially throughout the 2000s, we created, approved, and implemented in Brazil, the following:

- The Law 10639/2003 that has institutionalized the teaching of Afro-Brazilian and African history and culture in the school curriculum (Brasil, 2003);
- National Curriculum Guidelines for the Education of Ethnic-Racial Relations and for the Teaching of Afro-Brazilian and African History and Culture (Brasil, 2004; Silva et al., 2006);
- Law 12.711/2012—that has created policies to a reservation system—which includes quotas/seat reservations in the whole higher educational system—for students from K-12 public schools, and Afro-Brazilians, Browns, and Indians (Brasil, 2012).

These political actions in dialogue with the current production on Afro-Brazilian music in ethnomusicology but also in music education, among other fields in general, have created another scenario which includes new perspectives to promote inclusion and valorize Afro-Brazilian culture and history.

The research problem

Within the theoretical framework presented, the epistemological basis behind the main concepts regarding this research project, and the literature review, this research pursued the follow research problem: Has Afro-Brazilian music dialogued and interacted with music teaching in higher music education in Brazil? If so, how?

Methodology

The universe of this research was constituted by 20 of the most preeminent Brazilian Universities in the field of music currently. The institutions were selected from the following criteria:

- regional specificities – four institutions from each region of the country;
- the number of students – institutions with the most significant number of students; and,
- diversity of undergraduate programs – focused on institutions that work on a diverse range of music.

The qualitative approach that supported the study was carried out from two main procedures of data collection:

- Bibliographical study. This procedure enabled me to gather and analyze historical and contemporary scientific productions related to higher education, higher music education, colonization, coloniality, Afro-Brazilian music cultures, among others.
- Documentary research. It encompasses documents such as the pedagogical project of undergraduate programs, syllabi of the curricular components, official websites of the institution that were researched, and other documental sources related to the research study.

Findings

Afro-Brazilian musical culture in higher music education

The research outcomes showed that although some new music perspectives are now present in higher music education, it is critical to recognize that teaching classical music and its canons is still a dominant trend in Brazilian music institutions. The Figure 1 confirm this assert.

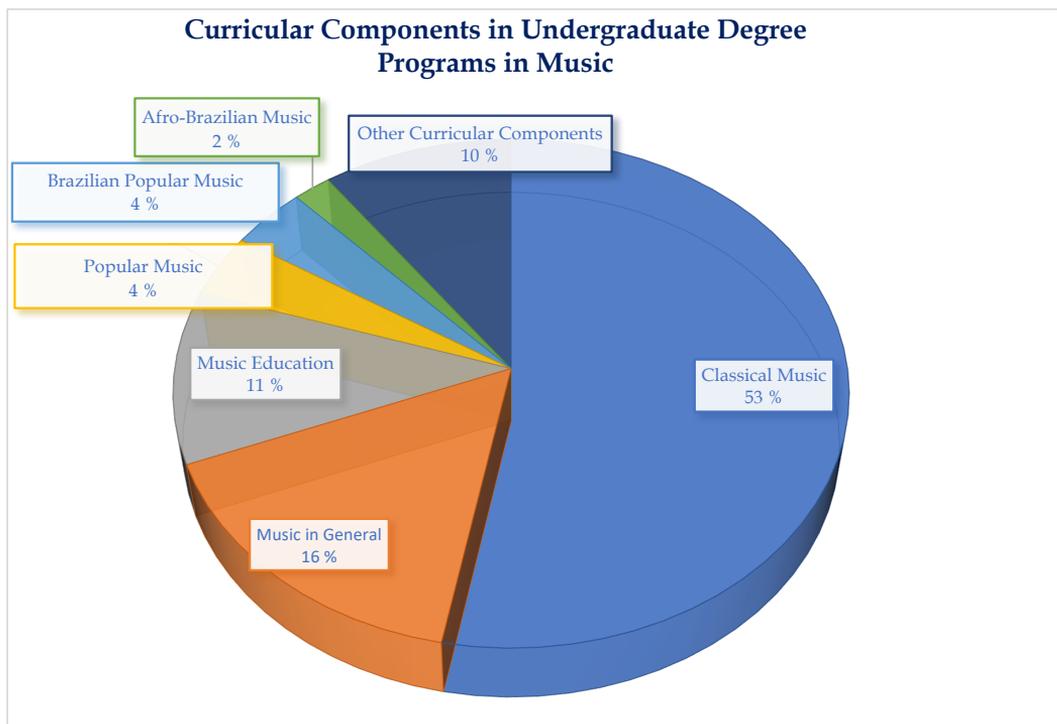


Figure 1. Curricular components in undergraduate degree programs in music in Brazil.

General aspects of Afro-Brazilians Inclusion in Higher Education and Higher Music Education

Taking this general reality into consideration, it is important to analyze not only the situation of Afro-Brazilian music into higher music education. Beyond that, it is vital to understand what the current reality of Afro-Brazilians and browns at this educational level is. Some general data show a positive finding: the population of blacks and browns is increasing. According to the National Household Sample Survey (Brasil, 2020b), Brazil has 40% of whites, 11% of blacks and 49% of browns.

These numbers show the percentage of black people and browns in Brazil is 60%. It is worth mentioning that 2018 was the first year in Brazil that whites do not constitute the majority of the population. Another important data to be analyzed is that the process of affirmative policies to diminish the exclusion of Afro-Brazilians into public universities, as mentioned before in this paper, has achieved some great results.

Data from recent studies in Brazil (ANDIFES, 2019) show that 51% of the student population in federal universities around the country is black or black descendant. Although this is lesser than the number of Afro-Brazilians around the country, these figures are expressive, especially if we take into consideration the number of fifteen years ago. That time the blacks and browns were just 37% of this universe.

However, considering precisely the reality of music undergraduate programs, this research demonstrated that only 34% of students in Brazilian higher music education are black or brown. It implies that in the field of music the most substantial majority of students at this educational level are white (66%).

These data enable us to conclude that music programs, for many reasons, exclude proportionally more Afro-Brazilians than the whole system of higher education in Brazil. If we look at the number of faculty members, the figures are much worse. Only 16% of music professors in the field of music are black or black descendants, and in this case, the average is similar to the national one in higher education as a whole.

From these general data, we will analyze in the next part of this text some data related to dialogues and interaction between Afro-Brazilian culture and undergraduate programs in music.

Afro-Brazilian musical culture in undergraduate music programs

The program goals

The programs, in general, stressed that they are focused on preparing professionals to work in a lot of cultural contexts and work on several music expressions. Conversely, none of them directly specify Afro-Brazilian music as a part of their educational process, and there is no mention of this context as a possible field of research, performance, teaching activities, and so on, for the alumni.

The knowledge and contents

The outcomes of this research show that we are still entirely dominated by a white supremacy frame-based curriculum (Figure 2). It includes music contents but also goals, methodological approaches, bibliographical references, curricula settings, among other things.

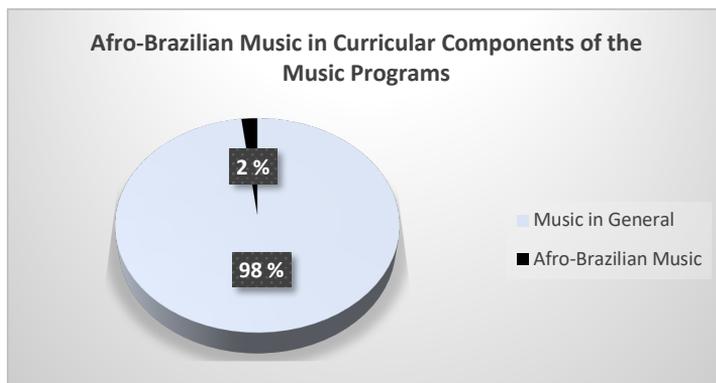


Figure 2. Afro-Brazilian music knowledge and contents in curricular components of music programs.

In a universe of 3,480 curricular components that I analyzed, only 70 were found to be related to some aspects of Afro-Brazilian culture – looking at these numbers, we have 65 related to Afro-Brazilian music and five generally related to Afro-Brazilian culture. To a certain extent, these numbers are even worse than they appear. Among this 2% of Afro-Brazilian based curricular components, we have 17 with some relations with Afro-Brazilian culture that are also related explicitly to Brazilian classical music, which means the actual percentage stands at not 2 but 1.5%.

Among these 65, only four curricular components directly specify Afro-Brazilian music as the focus of their approach. These components are: "Afro-Baiano Rhythms I", "Afro-Baiano Rhythms II", both offered by the Popular Music Program of the Federal University of Bahia, and "Pernambuco Rhythms" and "Frevo Workshop", both offered by the Music Teacher Education program of the Federal University of Pernambuco.

The music curriculum framework

Although sometimes, Brazilian universities have innovated by bringing some different types of music in their undergraduate programs, mainly in dialogue with the ethnomusicological studies, they have done this by adapting other musical culture into the limited model of the course-based curricula. All the universities researched use this model as a reference to set up their curricula, promoting only a few sets of attempts to propose other strategies to organize the contents and other ways to promote music experience beyond the traditional model created to teach Western classical music.

It implies that even when Brazilian undergraduate programs change the music repertoires, they retain the same shape to set them up into the curricula. This model is another trait of coloniality in higher music education, which does not dialogue with the dynamic and the particular ways that Afro-Brazilian music moves and develops around the country.

Conclusion

Music education research needs to be more involved actively with higher music education. It implies the conduction of research projects and the problematization of disparities and social issues that are still dominant at this educational level in Brazil. The low quantity of scientific production and the absence of studies related to diversity in this context highlight this gap.

The research outcomes evidence that despite some advancements related to the inclusion of black people and their descendants in higher education, in general, the participation of them in music undergraduate programs is much incipient. This feature is also strong in the dialogue and interaction between Afro-Brazilian musical knowledge and music teaching in higher music education.

The knowledge and contents that have been worked in higher music and education and the dominant curriculum framework at this education level evidence a sort of white supremacy in undergraduate programs in music. It shows that the music institutions of teaching and learning are still based on colonial ways to set up curricula and define the knowledge that deserves to be worked on. This dominance is incompatible with the richness of diversity and strength of Afro-Brazilian culture around the Brazil, but it is the main tendency countrywide.

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Children's Social Representations of Music

Giulia Ripani

Frost School of Music, University of Miami, USA

Abstract

Children are active agents in creating their musical cultures. However, musical childhood is still largely overlooked, particularly with attention to children's perspectives (Campbell & Wiggins, 2013). To examine the musical worlds that children conceptualize and experience, studies could use techniques borrowed from psychological research. Projective methods, such as free response to textual stimuli, access the most latent and consistent dimensions of thinking, thus providing deeper analyses of children's musical worlds. Echoing methodological suggestions of psychological research, the purpose of this study was to examine children's mental images of music and musical engagements through free responses to textual stimuli. Participants were primary students aged 8 to 11 ($N = 132$) from four schools in a large city in the South-eastern United States. The instrument was divided in two parts. First, free responses to textual stimuli ("music," "music and me," "music at school," and "music outside school") were collected to gain insights into children's representations of music and musical engagements. Second, participants were asked to provide socio-demographic data (gender, age, ethnicity, school, parental involvement, SES, and musical experiences) that might affect or correlate to their mental images. Free responses to textual stimuli and socio-demographic data were processed by the software SPAD. The Correspondences Analysis technique was used to reconstruct representational fields associated to the stimuli. For each stimulus, a three-factor extraction identified hidden dimensions in children's linguistic responses and summarized the links between socio-demographic variables and children's representations. Insights into children's conceptualizations of music and musical engagements helped construct a narrative of their musical worlds in terms of definitions of music, practices, meanings, and evaluations of musical experiences. Beyond highlighting dimensions in children's representations of music and musical engagements, the Correspondences Analysis demonstrated that children's musical thinking was affected by complex interactions between socio-demographic variables. Major findings suggested that (a) children at increasingly younger ages express preferences and construct their own representations of music and musical selves, and (b) although ethnicity differentiates children's musical thinking, some musics have created identifiable groups across ethnic boundaries. As documented in this study, deeper analyses of children's musical worlds could contribute to link pedagogical goals to students' interests and needs in changing socio-cultural

contexts, thus supporting ongoing commitment to music learning and musical engagement.

Keywords: children's musical cultures, Theory of Social Representations, projective methods.

Introduction - background and aim

The aim of music education is to foster students' active and ongoing participation in musical activities. However, few students continue their formal music instruction to the end of high school (Evans et al., 2012). Among the reasons, there is the lack of correspondence between children's musical interests and teachers' instructional goals. Understanding children's musical worlds is therefore important to support their learning processes and musical involvement. To gain insights into young musical cultures as individually and socially shaped in specific socio-cultural contexts, the purpose of this study was to analyze children's mental images of music and musical engagements through verbal responses to textual stimuli.

Previous research on musical childhood highlighted the need for deeper analyses of the music worlds that children perceive and experience. Studies on the content of children's musical thinking provided decontextualized analyses of musical preferences or used interviews and observations that might inhibit participants' spontaneous thoughts and musical engagements (Abric, 2003; Campbell, 1998; de Rosa, 2002). Studies that examined the influence of contextual variables analyzed individual cognitive processes and socio-cultural factors along separate paths. Thus, there is a lack of studies that, overcoming the methodological biases of previous research, integrate both cultural and individual aspects into a more comprehensive view of musical experiences (Hargreaves & North, 2000).

Answering the call for inclusive contributions, studies could use a theoretical framework and methodological suggestions borrowed from psychological research. For instance, the socio-psychological Theory of Social Representations was developed in the 1960s to explain social modes of understanding as individually and socially shaped in specific socio-cultural contexts. These modes were operationalized in the concept of social representations (SR), a dynamic lens that people use to perceive and organize the world in which they live (Moscovici, 1973). Representations are simultaneously an individual and collective activity, being the product of (a) the

individual who produces a representation, (b) the object that is represented, and (c) the social group within the representations are elaborated (Bauer & Gaskell, 2001).

Social representations have been analyzed through projective methods such as drawings and reporting linguistic associations to textual stimuli. These techniques present some advantages. First, they provide access to the most latent and consistent dimensions of thinking. Overcoming the biasing effects of cognitive responses, they produce deeper understanding of inner thoughts (Abric, 2003). Second, on the belief that the responses most rapidly produced are also the most socially shared, verbal associations give the possibility to examine mental images as individually and socially constructed in specific socio-cultural contexts (de Rosa, 2002).

Although limited attention was paid to music education and children's musical images in terms of social representations, studies that addressed children's representations of different social objects and/or educational contexts showed that the theory could also provide a valuable framework for comprehensive analyses of children's musical thinking (de Abreu & Cline, 1998). In order to gain insights into children's social representations of music and musical engagements in terms of content of musical images and influences of socio-demographic variables on their inner thoughts, this study addressed the following research questions:

1. What are children's social representations of music?
2. How do children use music to describe themselves?
3. How do children mentally represent their engagements with music at school and outside the school environment?
4. How do socio-demographic variables such as age, gender, ethnicity, socio economic status (SES), musical background, and parents' music involvement (PIM) contribute to differentiate children's mental images of music and musical engagements?

Methods

The participants of the study ($N = 132$) were students from four schools in a large city in the South-eastern United States. For identifying context-related differences, schools were chosen by using purposive sampling based on previous demographic information. The schools were selected to represent the main ethnic groups in the city. Then, data were collected among students who voluntarily decided to participate in the study.

The instrument of the study was divided in two parts. First, free responses to textual stimuli (“music,” “music and me,” “music at school”, and “music outside school”) were collected to gain insights into children’s social representations of music and musical engagements (question one to three). Participants were also asked to indicate whether each word had a positive, neutral, or negative connotation. For each textual stimulus, the total number of positive, negative, and neutral words was used to create the index of polarity (ranging from -1 to 1) as a measure of the attitudinal component in participants’ linguistic associations. Second, participants were asked to provide socio-demographic data (gender, age, ethnicity, school, parental involvement, SES, and musical experiences) that might affect or correlate to their mental images (question four).

Linguistic associations and socio-demographic data were processed by the software SPAD-(Système Portable d’Analyse des Données) (Lebart et al., 1989). Among the available procedures, the Correspondences Analysis was used to reconstruct representational fields associated to the stimuli (Ercolani et al., 1990). For each stimulus, a three-factor extraction (a) identified dimensions in children’s free linguistic responses (question one to three) and (b) summarized the links between socio-demographic variables and children’s representations of music and musical engagements (question four). Two indexes were used to select words and contextual variables on each semi-axis: (a) absolute contribution (a.c. = contribution of words and variables on each factor) and (b) relative contribution (r.c. = relative contribution of words and variables across factors).

Results

The results of the study helped construct a narrative of children’s musical worlds in terms of definitions of music, preferences, practices, and meanings of musical experiences. The analysis of the indexes of polarity showed that the four verbal stimuli were characterized by overall positive connotations. The procedure Characterization of Continuous Variables performed all the One-way ANOVA to examine the links between polarity indexes and socio-demographic variables. The analysis of the Fisher statistics highlighted significant co-variation between polarity indexes associated to “music and me” and age, $F(1,130) = 10.35, p < .05$. More positive representations of the stimulus “music and me” characterized the youngest participants than the oldest students ($M_s = .79$ and $.58$, respectively).

Moreover, the analysis of the Fisher statistics showed significant co-variation between polarity indexes associated with “music at school” and variables such as age, $F(1,130) = 17.73, p < .05$ and ethnicity $F(4,127) = 3.96, p < .05$. Specifically, the youngest students described “music at school” more positively than the oldest students ($M_s = .73$ and $.35$, respectively). The Black or African American ethnicity presented the lowest positive *connotation* of music at school in contrast to more positive evaluations provided by the Latin American and White ethnicities ($M_s = .43, .83$, and $.69$, respectively).

Music (question one and four)

Children’s representations of “music” included preferences, evaluations, concrete elements and references to uses of music. Although *rap*, *jazz*, and *hip hop* characterized Black or African American students’ associations, references to rap and hip-hop musicians, such as *Post Malone* and *6ix9ine*, were also present in Latin American and White participants’ responses. Instead, references to rock musicians and musical groups such as *Elvis*, *Queen*, and *The Beatles* were specific of White students.

While older students associated music with the contrasting words *good*, *boring*, and *I am not interested*, young students generally expressed positive evaluations of music in the lexical forms *I like it*, *amazing*, and *happiness*. Moreover, children mentioned musical instruments such as *piano*, *strings*, *woodwinds*, *ukulele*, and *xylophone*. White and Latin American children referred to activities connected to music such as *playing*, *listening*, and *dancing*. The word *singing* characterized children’s associations regardless of their age, school, and ethnicity.

White children who indicated extracurricular music experiences and high parents’ musical involvement described music with *waves*, *vibrations*, *pitches*, *dynamics*, and *texture*. They also mentioned the words *calluses* and *performance* that were connected to strings classes experiences. Hispanic students used the words *world* and *Morocco*, thus connecting music to world music. They also associated music with channels for music consumption such as *technology* and *TV*.

Finally, children referred to different uses of music. Latin American children defined music as a means for social bounding in the lexical form *together*, and emotional expressions in the words *happiness*, *emotions*, and *heart*. In common with the Black ethnicity, they also referred to the religious use of music in the word *God*. White children referred to music as a means for mood regulation while highlighting its ludic dimension in the words *games* and *videogames*.

Music and me (question two and four)

Children's representations of "music and me" included evaluations, emotions, instruments, and uses of music. Evaluations toward the stimulus were present in children's responses regardless of their ethnicity, age level, and school. While using words such as *awesome* and *lovely*, White children recognized music as a *competitive* field. Moreover, Black or African American students used the contrasting lexical forms *I like it*, *I love it*, and *I hate it*. Similarly, Hispanic students defined music with the contrasting adjectives *easy* and *hard*.

Children also referred to different uses of music. Latin American students highlighted the link between music and emotional states such as *happiness*, *exciting*, and *feeling*, thus acknowledging music as a means to express emotions. Both Latin American and White students referred to the importance of music in releasing negative emotional states in the lexical forms *relaxing*, *sleeping*, *stress*, and *frustration*. Moreover, White and Black or African American students highlighted social dimensions of musical experiences in the words *friends*, *families*, *together*, and *party*.

Additionally, children recognized the importance of music in defining their identities in the pronoun *me*, the adjectives *meaningful* and *important*, and the verb *to match*. Among possible uses of music, children also referred to music as both school subject in the words *work* and *school*, and ludic practice in the lexical forms *games* and *videogames*. Beyond evaluations and uses of music, Black or African American children re-stated their preferences for rap and hip-hop musicians and musical groups. Latin American children mentioned real and virtual places for music consumption such as *church*, *car*, and *You Tube*. Finally, children referred to a variety of musical instruments and activities connected with music such as *singing*, *dancing*, and *listening*.

Music at school (question three and four)

The Correspondences Analysis showed that students' representations of "music at school" included evaluations regardless of their age, ethnicity, and school. While using the adjectives *fun*, *awesome*, *exciting*, *important*, and *educative*, students also defined "music at school" as *hard*. Black or African American students provided the less positive representation of the stimulus in the contrasting lexical forms *lame*, *boring*, *not for me*, *okay*, and *encouraging*.

Latin American and Black or African American children mentioned specific elements of the school environment such as *class*, *teacher*, *instruments*, *chairs*, and *tables*.

Moreover, White and Latin American children specifically referred to classroom activities such as *dance*, *play*, and *watching videos*.

Music outside school (question three and four)

Children's representations of "music outside school" included themes such as preferences, experiences, real and virtual places for music consumption, and musical elements.

Although characterizing the associations of Black or African American children, references to *rap* and *hip hop* were also found in Latin American and White participants' responses. Moreover, children referred to musical experiences outside school in terms of musical activities and places. Latin American students generically mentioned instruments and activities with music such as *dancing* and *stretching*. They also indicated virtual and real places for musical engagements such as *concerts*, *church*, *car*, *store*, *TV*, and *YouTube*.

White Children referred to string classes experiences in the words *violin* and *play*, while indicating specific musical elements such as *sound*, *notes*, *pitch*, and *texture*. Moreover, Black or African American students mentioned *phone* and *Walkman*. Beyond preferences and musical experiences, Latin American children associated "music outside school" with positive feelings such as *happiness* and *joy*. Finally, Latin and White children highlighted the relaxing function of music in the verbs *calming* and *relaxing*.

Discussion

First, beyond references to instruments, melodies, and preferences that had previously emerged in children's interviews about music (Campbell 1998), an evaluative component was present in students' free associations to verbal stimuli. While direct interviews and observations may inhibit participants' spontaneous reactions and musical thinking (Campbell, 1998; de Rosa, 2002), projective methods can provide access to the most latent dimensions of thinking (Abric, 2003). Thus, free associations might have reduced "the biasing effect of filtering all responses through the cognitive response mode that is inherent in any self-report techniques [e.g., interviews]" (Cutietta, 1992, p. 301).

Second, music does not play a singular role in children's lives (Campbell, 1998; De Vries, 2010). Children clearly referred to different uses of music such as social

bounding and emotional expression and regulation. They also described music as a means for identity construction in lexical forms such as *me*, *important*, and *matching*. While studies mainly addressed the role of music throughout adolescence, music seems to have a growing importance also in children's identity construction processes (Bosacki et al., 2006).

Third, children's musical thinking was affected by complex interactions between socio-demographic variables. Age, ethnicity, and school significantly differentiated children's representations in terms of musical preferences, evaluations, and experiences. Marginally differences were found in relation to SES and parental involvement. Although several studies demonstrated the influence of gender-stereotypic models on children preferences and instrumental choices (Abeles & Porter, 1978; Crowther & Durkind, 1982; Harrison & O'Neill, 2000), gender-related differences were only and marginally found for the stimulus music and me. These findings seemed to suggest that (a) gender stereotypes had a stronger influence in children's definitions of musical selves ("music and me") than in children's overall representations of music and musical engagements ("music," "music at school," "music outside school"), and (b) the impact of gender-related music stereotypes might be stronger in cognitive responses (interviews) than in spontaneous reactions.

The comparison between representations of "music at school" and "music outside school" across ethnical groups showed some elements of interests. The variable ethnicity differentiated children's musical representations in terms of uses of music, evaluations, and preferences. The Black or African American students provided the less positive image of "music at school" in the lexical forms *boring*, *lame*, and *not for me*. Instead, they positively associated preferences for *rap* and *hip hop* and ways for music consumption such as *phone* and *Walkman* with the stimulus "music outside school." Consistently with literature on culturally relevant pedagogy, these findings seem to suggest the need for school curricula that address children's interests and needs (Campbell & Wiggins, 2013; Folkestad, 2002).

Although rap and hip-hop genres were characteristic of Black or African American students' associations, rap and hip-hop musicians and musical groups were also found in Latin American and White children's associations. As suggested in the literature, the development of a global youth culture shapes children's musicking and musical thinking (Folkestad, 2002). Thus, some musical genres and musicians have created identifiable groups across ethnic boundaries (Campbell & Wiggins, 2013).

Limitations and recommendations for future research

Prior research that used the SRT as theoretical framework was based on a multi-method approach to reveal the complexity of mental images. The purpose was to triangulate various sources of information to obtain comprehensive understanding of the phenomenon of interest. In analyzing children's mental images of music and musical engagements, this study used free responses to textual stimuli. Because of its flexibility and creativity, this technique was attractive for the subjects of the study and cognitively matching their developmental level.

However, a single study based on one method for collecting data can only provide partial understanding of children's social representations. Therefore, this first attempt in investigating musical images should be supported, validated, and extended in future analyses. Although the results of the study showed complex interactions between children's thoughts and socio-demographic data, future studies can provide deeper understanding of the role of contextual variables in shaping children's musical thinking.

Implications for practice

Although previous research did not extensively address music education and children's musical thinking in terms of social representations, this study demonstrated the validity of projective techniques to inquire children's inner thoughts. Holistic analyses that take into account children's perspectives could have several implications for music instruction.

First, giving voice to children on their musical thinking presents students as musical minds rather than empty recipients to be filled (Campbell & Wiggins, 2013). Children are active bearers of their own musical words (Whiteman, 2013; Folkestad, 2002). Similarly, students should be considered active agents in music learning processes. Projective techniques can help students articulate their musical thinking and express their musical needs. As Campbell (1998) argued:

Embedded within the words of children are the seeds for more appropriate instruction relevant to their needs, just as wrapped within their behaviors are the telling signs of what they can musically do. From these revelations of songs, rhythms, and musical reflections can come not only a deeper perspective of the

musical nature of children, but also the basis for their more effective musical education. (p. 12)

Second, considering children's musical worlds could enhance the knowledge of contextual influences on children's musical thoughts and practices. Children's musical cultures are multi-dimensional worlds that are shaped by familiar, local, national, and global influences. While socio-cultural environments affect children's preferences and mental images of music, some musics have created groups across ethnic boundaries. Thus, music education should face the formation of a global youth identity while considering the challenges of culturally responsible pedagogies.

Finally, students' capacity to engage in learning activities successfully depends on the possibility to access and connect new understanding to their past experiences and concepts (Wiggins, 2016). Children construct new learning and develop new skills by using what they already know (Hoover, 1996). Music assimilation could be fostered by adopting content and practices that are meaningful for students. Deeper analyses of children's musical worlds that contribute to link teachers' pedagogical goals to students' needs and interests will eventually support ongoing commitment to music learning and musical engagement.

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Music Aptitude and Music Achievement: A Meta-Analysis

Christina L. Svec¹, Grant Becker¹, Amanda Schlegel²

¹Department of Music & Theatre, Iowa State University, USA

²School of Music, University of South Carolina, USA

Abstract

Aptitude might be influenced by nature and nurture (Gordon, 1986; Webster, 1988), and has involved skills related to tonal and rhythmic imagery (Gordon, 1986), music syntax, flexibility, and originality (Webster, 1988). Although Gordon (2001) defined music aptitude as the potential for music achievement, the definition may be problematic (Karma, 1997) due to its multifaceted nature. The purpose of the current meta-analysis was to explore relationships regarding the intersection and alignment of music aptitude and music achievement. Analyses yielded an overall medium effect size ($r = 0.42$, 95% CI [0.42, 0.43]) regarding the relationship between music aptitude and music achievement. Preliminary moderator variable analyses included the following categories: grade level, grade level groups, and special populations. Subsequent analyses will yield information regarding condition, age, gender, publication source/year, and research design. Preliminary analyses indicated that teachers, overall, should be able to observe the relationship between aptitude and achievement, although the ease varies based on aptitude test, level, and experience. Subsequent analyses will aim to provide more definitive answers while suggesting future directions for both aptitude and achievement measures.

Keywords: meta-analysis, music aptitude, music achievement.

Introduction

Aptitude might be influenced by nature and nurture (Gordon, 1986; Webster, 1988), and has involved skills related to tonal and rhythmic imagery (Gordon, 1986), music syntax, flexibility, and originality (Webster, 1988). Although Gordon (2001) defined music aptitude as the potential for music achievement, the definition may be problematic (Karma, 1997) due to its multifaceted nature. The variety of skills involved could complicate measuring aptitude.

Further exacerbating the complexities of measurement are transfer effects from music training, and subsequent achievement. These transfer effects, primarily to executive cognitive functions such as memory and attention, could have an influence on any cognitive measurements, including music aptitude and achievement (Suárez et al., 2016; Talamini et al., 2017).

Measures of music aptitude have been used as dependent variables within research extensively. Correlational investigations have been conducted between music aptitude and various other measures (e.g., Norton, 1980; Strait et al., 2011; Zdzinski, 1992). Research also exists regarding the development of aptitude tests and internal validity (e.g., Gordon, 1984; Karma, 2007) and ecological validity (Karma, 2007). Despite the theoretical and psychometric complexities of these measurements, the practical implications of these research areas for musicians of varying ages and subgroups illustrate the value of analysis.

The need for a statistical synthesis of music aptitude research was three-fold: (a) for the purpose of informing future music aptitude research, (b) disseminating informed results and conclusions, and (c) adding evidence to theoretical discussions. The purpose of the current meta-analysis was to explore group differences (between and across time) and relationships regarding the intersection and alignment of music aptitude and music achievement. Research questions for the analysis of correlational data included: (a) what is the overall effect size (ES); and (b) what are the statistical effects of moderator variables: condition, age, gender, measurement instruments, aptitude type, publication source/year, populations, and research design? Results of the current analysis have been limited to the following moderator variables: grade level populations, grouped grade level populations, special populations, achievement measurement instrument, aptitude measurement instrument, and aptitude type.

Method

The meta-analytic process included: creating exclusion/inclusion criteria, literature search, coding articles, calculating study ES's, calculating an overall effect size, and moderator variable analyses (Card, 2012). The meta-analysis utilized a conditional inference model with fixed-effects procedures.

Inclusion and exclusion criteria provide parameters regarding the appropriateness of research studies to be used within the current meta-analysis (Card, 2012). For the current study, the included articles must have aligned with the

following: must have measured music aptitude (tonal/rhythmic memory, discrimination skills), written in or translated to English, measured aptitude as interval level data, published 1950-present, dissertations and published research, included results from test construction studies, studies must have included scores for both music aptitude and music achievement, studies must have included sufficient correlational data, and music achievement must be based on either achievement scores or performance scores. Articles excluded from the current study aligned with the following: Master's theses and unpublished data, scales unrelated to music achievement, self-esteem measures, studies using aptitude as nominal level data, measures that included self-reported data for either aptitude or achievement, neurological assessments, and pilot study data.

The literature search included the following terms: *music aptitude*, *Seashore Measures of Musical Talent*, *Drake*, *PMMA*, *AMMA*, *IMMA*, and *music aptitude achievement*. Studies were also located with backward searches (utilizing reference lists), and forward searches (locating studies that cited other included studies). Search engines included those available through the researchers' institutional libraries. The Proquest Dissertations and Theses Database was accessed to search for additional studies.

Articles included within the correlational analysis were independently coded by the primary investigator and a co-author. Codes were determined a priori and provided information necessary for moderator variable analyses. Codes included those pertaining to sample sizes, age, population level, aptitude measures, music achievement measures, condition (where applicable), independent variables, geographic information, research analysis, treatment period, publication type, language, and restricted population information. Inter-agreement reliability was found tenable at 96%.

Effect size calculations for overall effects, confidence intervals, and moderator variable analyses utilized several methods. Equations (Card, 2012) were used to calculate ES's from reported data where applicable: means, standard deviations, F/t-tests, and correlation information. Correlational data were interpreted with r with the following parameters: small effect size ($r = 0.10$), medium effect size ($r = 0.30$), and large effect size ($r = 0.50$) (Ellis, 2010). Effect sizes within individual studies were calculated using an online effect size calculator (Wilson, 2018). Study effect sizes, overall ES analysis, and moderator variable analyses were calculated using Field and Gillet's (2010) SPSS syntax.

Pilot

A pilot study was employed to determine the feasibility of exploring music aptitude using meta-analytic procedures. Studies were included within the analysis if a music aptitude scale was a dependent measure. Across studies that were tenable for a correlational meta-analysis, effects ranged from large ($r = 0.68$) to negligible ($r = 0.10$). The dependent variables correlated with music aptitude were categorized as part of the moderator variable analysis. Categories included: demographic information, parental involvement, physiological variables (finger length, testosterone, EEG), self-esteem, self-perception, teacher perception, motivation, processing (phonological, auditory, memory), skills (visual, auditory, perceptual), achievement (music, academic), and measures of intelligence. Given the breadth of variables, little meaning could be extracted from the overall effect size for the project. What meaning could be extracted from the initial analysis, however, yielded important information regarding the meta-analytic process applied to music aptitude research: a pilot study that indicated feasibility for the method. Music Achievement was extracted from the pilot to explore specific implications pertaining to music education.

Results

There was an overall medium effect size ($N = 6,720$, $k = 546$, $r = 0.42$, $p < 0.0001$, 95% CI [0.42, 0.43]) regarding the relationship between music aptitude and music achievement. A literature search yielded 220 studies. Of those studies that were analyzed and coded, 29 articles included correlational data that were tenable for the current study. Subsequent analyses will include additional research designs.

Across 29 studies, effect sizes ranged from large to small. The largest effect sizes included relationships between Drake and Seashore aptitude scores of undergraduate participants ($r = 0.81$, 95% CI [0.69, 0.88]), IMMA scores and children's musical performance assessments ($r = 0.68$, 95% CI [0.66, 0.7]), and AMMA scores and high schoolers' musical performance assessments ($r = 0.56$, 95% CI [0.73, 0.33]). The smallest effect sizes included PMMA scores and children's singing achievement scores ($r = 0.1$, 95% CI [-0.02, 0.21]), MAP scores and gifted children's musical association responses ($r = 0.06$, 95% CI [0.04, 0.1]), and IMMA scores and 5th grade instrumentalists' performance assessments ($r = 0.05$, 95% CI [-0.13, 0.23]). Refer to the Figure 1 forest plot for all studies by effect size.

Studies were statistically regarded as heterogeneous, therefore necessitating moderator variable analyses. Moderator variables were chosen a priori. Results included the following moderator variables: grouped grade level populations, subgrouped grade level populations, special populations, achievement measurement instrument, aptitude measurement instrument, and aptitude type. Subsequent analyses will include the following moderator variables: condition, age, gender, aptitude component, publication source/year, and research design.

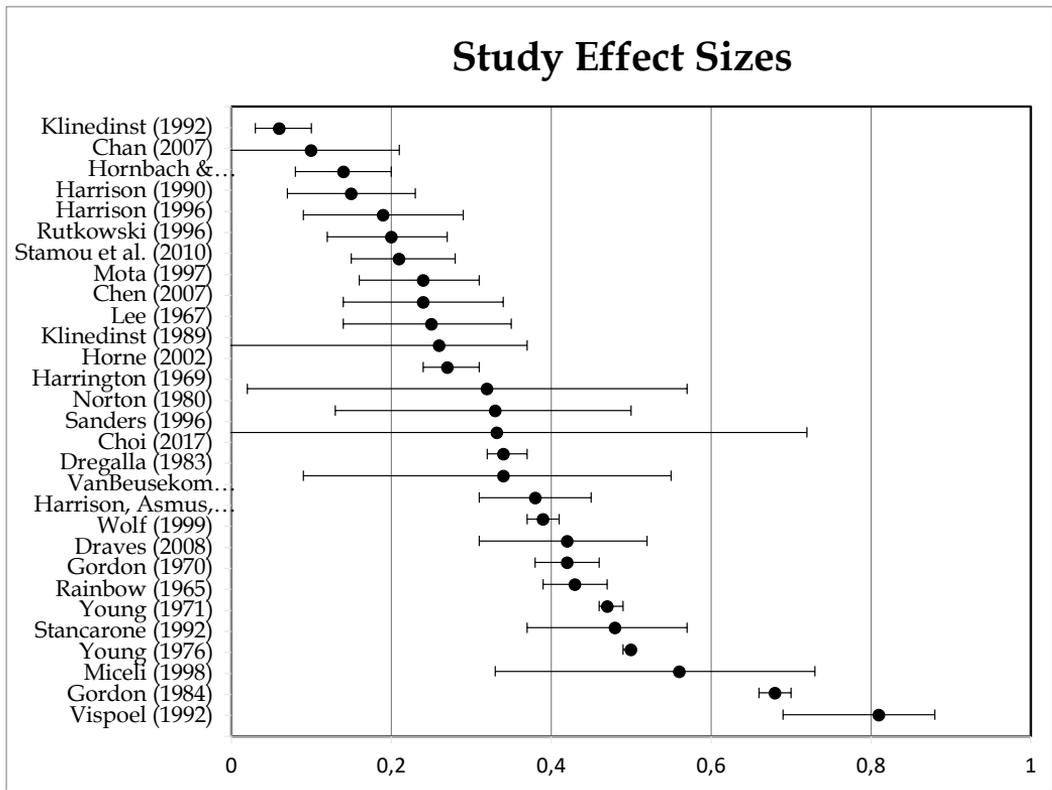


Figure 1. Study effect sizes.

Preliminary moderator variable results stratified populations into the following categories: large group population level, population level, and special populations. Large group population levels included the following categories: Grades K-2, Grades

3-5, Grades 7-8, Grades 9-12, and Undergraduate. Refer to Figure 2 for categories regarding population levels. Special populations included the following categories: Gifted, College Non-music Majors, College Music Majors/Minors, Instrumentalists, Choristers, and General Music.

Moderator variable *large group population level* yielded small to medium effect sizes ($r = 0.28-0.47$). A medium effect size was found for Grades 3-5 ($r = 0.47$, 95% CI [0.46, 0.49]), Grades 7-8 ($r = 0.44$, 95% CI [0.38, 0.5]), Grades 9-12 ($r = 0.35$, 95% CI [0.33, 0.37]), and Grades K-2 ($r = 0.34$, 95% CI [0.32, 0.36]). A small effect size was found for Undergraduate participants ($r = 0.28$, 95% CI [0.24, 0.32]).

Moderator variable *population levels* yielded small to large effect sizes ($r = 0.19-0.67$). The largest effects were found for Grade 4 ($r = 0.67$, 95% CI [0.65, 0.69]), Grade 6 ($r = 0.50$, 95% CI [0.47, 0.5]), and Grades 7-8 ($r = 0.44$, 95% CI [0.38, 0.50]). The smallest effects were found for Grade 1 ($r = 0.25$, 95% CI [0.17, 0.32]), Grade 3 ($r = 0.24$, 95% CI [0.2, 0.28]), and Kindergarten ($r = 0.19$, 95% CI [0.11, 0.27]). Refer to the Figure 2 forest plot for population levels by effect size.

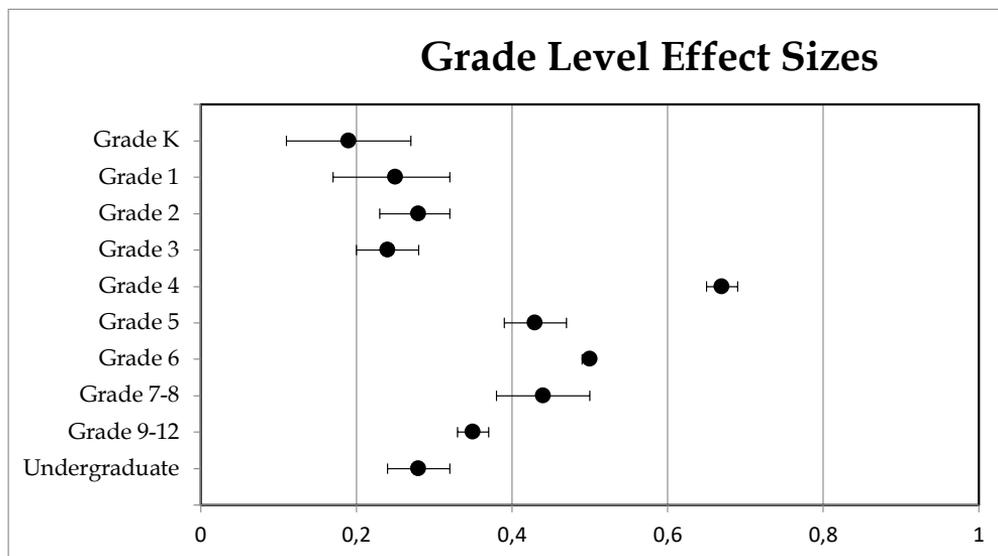


Figure 2. Grade level effect sizes.

Moderator variable *special populations* yielded small to large effect sizes ($r = 0.11-0.52$). A large effect size was found for Instrumentalists ($r = 0.52$, 95% CI [0.51, 0.53]).

Medium effect sizes were found for Collegiate Music Majors/Minors ($r = 0.33$, 95% CI [0.28, 0.38]) and General Music ($r = 0.33$, 95% CI [0.32, 0.35]). Small effects were found for Collegiate Non-music Majors ($r = 0.25$, 95% CI [0.18, 0.31]), Choristers ($r = 0.19$, 95% CI [0.05, 0.32]), and Gift Populations ($r = 0.11$, 95% CI [0.08, 0.13]).

Preliminary moderator variable analyses were also conducted on the following variables: achievement measurement instrument, aptitude measurement instrument, and aptitude type. *Achievement measurement instrument* included the following categories: Written Assessment and Performance-based Assessment. Subsequent analyses will stratify achievement measures further. *Aptitude measurement instrument* included the following categories: AMMA, CMAP, PMMA, MAP, Seashore, MMA, and IMMA. *Aptitude type* included the following categories: Sensitivity, Rhythmic, Tonal, and Composite.

Achievement measurement instrument, *aptitude measurement instrument*, and *aptitude type* yielded large to medium effect sizes. Moderator variable *achievement measurement instrument* yielded medium effect sizes for both written assessments ($r = 0.42$, 95% CI [0.42, 0.43]) and performance-based assessments ($r = 0.45$, 95% CI [0.44, 0.46]). *Aptitude measurement instrument* yielded large effects for IMMA ($r = 0.59$, 95% CI [0.57, 0.61]), medium effects for MMA, Seashore, MAP, and PMMA ($r = 0.33$ -0.47), and small effects for CMAP and AMMA ($r = 0.27$ -0.29). *Aptitude type* yielded medium effects for Composite, Tonal, and Rhythmic ($r = 0.39$ -0.49) and a small effect for Sensitivity ($r = 0.21$, 95% CI [0.18, 0.24]).

Conclusion

Although results were preliminary, the medium effect size ($r = 0.42$) found for the current study has been fairly consistent across music education meta-analyses (Mishra, 2013, 2014; Standley, 1996, 2008; Svec, 2018). For populations similar to those represented in the preliminary analysis, the relationship between music achievement and music aptitude may be seen with the naked eye, overall, and by a music specialist who understands the intricacies of music aptitude and achievement.

Moderator variable analyses were employed to answer the second research question: what are the statistical effects of moderator variables? The current results were limited to populations, measurement instruments, and aptitude type. Subsequent analyses will yield information regarding condition, age, gender, publication source/year, and research design.

Regarding populations, the relationship between music achievement and aptitude seems to have been least observable with populations where educators might assume limited achievement. In the current study, that would include kindergartners, gifted populations (who had limited music experience), and non-music majors. Interestingly, choristers also demonstrated a small effect whereas instrumentalists yielded a large effect size. More research, however, may warranted given the limited number of studies specific to music achievement, music aptitude, and singers.

Observing the effects within *large group population levels* may have demonstrated that the relationship between music achievement and aptitude can be observed nearly identically within K-2 populations compared to 9-12 populations. Stronger relationships were apparent in 3-8th grades. *Population level* results, however, have provided an additional lens.

Regarding K-3 populations, the relationship seems to have strengthened as children aged, with a slight decrease in 3rd grade, followed by a large increase in 4th grade. This alone may have suggested developmental differences; it might instead reflect testing differences between the PMMA and subsequent measures. More research is needed regarding the intricacies between measures and how they interact with developmental aptitude.

Studies that included 5th-12th grade populations mostly consisted of music class participants. Given that college music majors demonstrated a stronger relationship between achievement and aptitude than non-music majors, it would seem logical that the relationship would also be stronger with musical class participants than with elementary general music participants. Is the relationship, however, a function of age or experience?

Aptitude type pertained to sensitivity, rhythmic aptitude, tonal aptitude, and composite aptitude. Sensitivity had the smallest relationship with music achievement, but that could have been a function of the achievement assessments mostly excluding sensitivity. Although tonal aptitude had a larger effect than rhythmic, it might not be large enough to matter. Researchers should investigate the need to include sensitivity within future aptitude measures, given how little they might be reflecting achievement measures.

The current study grouped achievement test type into written and performance-based assessments, yielding medium effects for both. A closer look of achievement test construction may yield important information regarding the vast variance across how

music educators assess, and potentially define, achievement. Subsequent analyses will expand upon the research design, including those outside of correlation studies.

The current study sought to answer theoretical questions regarding the use of music aptitude measures and how they related to music achievement. Preliminary analyses indicated that teachers, overall, should be able to observe the relationship between aptitude and achievement, although the ease varies based on aptitude test, level, and experience. Subsequent analyses will aim to provide more definitive answers while suggesting future directions of both aptitude and achievement measures.

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*Denotes studies included in the current meta-analysis. Contact the primary author directly for a full list of included and excluded citations.

‘Sing Every Day’: The Wider Benefits of a School-Based Singing Project with Disadvantaged Children

Graham F. Welch¹, Ross Purves¹, Jo Saunders¹, Katherine Mason¹,
Alice Bowmer¹, Ann Wright²

¹International Music Education Research Centre,
University College London (UCL) Institute of Education, UK
²VOCES8 Foundation, UK

Abstract

The paper reports on a research evaluation of a six-month specialist singing project ‘Sing Every Day’ that was undertaken with young disadvantaged inner-city 6yo children in the London Borough of Hackney. A team of professional singers from the London-based VOCES8 Foundation visited two classes in each of two primary schools to provide focused mentoring to generalist (non-music specialist) class teachers. Children from two identically aged classes in a neighbouring school acted as controls. The mentoring embraced a specially designed programme of singing and vocal activities across two school terms. This was undertaken in each classroom with the staff and their Year 1 children numbering $N = 121$ in total. An independent evaluation of the impact of the project included both musical and other-than-musical measures of children’s development. In particular, in addition to an assessment of participant children’s singing behaviours at the start and at end of the project, other assessments included measures of possible changes in children’s reading development and in aspects of Executive Functions. Overall, the implications from the data are that the mentored classroom-based singing activities resulted in significant improvements in children’s singing, as well as positive changes in reading and aspects of Executive Function related to inhibition and phonological working memory – the latter being closely correlated to changes in the same children’s reading scores. Although there is previous research literature reporting positive links separately between music, singing, reading and aspects of Executive Functions, this small-scale study is one of the first to explore these three aspects collectively. As such, the current data suggest that more detailed research would be useful, both in seeking possible replication of the findings with a larger group of participants and also to understand the mechanisms of such possible linkage in terms of both basic research and also its implications for music pedagogy.

Keywords: children’s singing, mentoring, VOCES8.

Introduction - background and aim

It has been reported that early music experiences can have a beneficial impact on a wide range of developmental features in children, embracing cognitive, emotional, physical and social domains (see Barrett et al., 2019; Hallam, 2015; Schlaug, 2015; Silvia et al., 2016; Welch et al., 2020 for reviews). For example, a recent Canadian population-level analysis of associations between school music participation and academic achievement of $N = 112,916$ children in Grades 7-12 in British Columbia (Guhn et al., 2019) found that music participation (vocal and instrumental) was related to higher Provincial examination scores in mathematics, science and English (controlling for participants previous academic achievement and sociodemographic backgrounds). In a smaller-scale, longitudinal study, $N = 265$ children in Grades 1 to 8 (ages 6 to 14) from a school in an economically disadvantaged neighbourhood of a US city were selected by lottery to participate in an out-of-school music programme (Holochwost et al., 2017). This offered individual- and large ensemble instrumental education over a two-year period, based on El Sistema model from Venezuela. Compared to matched controls, the impact of programme enrolment included higher levels of academic achievement, as measured by standardised tests in reading, mathematics, and language arts, and superior performance on select tasks of short-term memory (STM) and Executive Functions (EFs) – the latter seen as foundational cognitive capacities that include working memory, inhibition and cognitive flexibility (Bowmer et al., 2018).

Internationally, UNESCO (2019) defines ‘early childhood’ as 0-8 years and highlights (2016) four main profile areas by which early childhood development can be assessed. These are executive function, social and emotional development, motor development and early literacy and numeracy. For each of these four areas, there is a growing database of research literature that demonstrates that these can be nurtured through sustained engagement in musical activity. This is evidenced in studies on children’s executive function (e.g., Bowmer et al., 2018; Bugos & DeMarie, 2017; Frischen et al., 2019; Moreno et al., 2011; Zuk et al., 2014), social and emotional development (Alemán et al., 2017; Barrett, 2011, 2017; Hallam, 2010; Welch et al., 2014), motor development (both in children, Derri et al., 2001; Zachopoulou et al., 2004, as well as in child and adult musicians, Schlaug, 2015), and also concerning early literacy and numeracy (Anvari et al., 2002; Cohrdes et al., 2016; Moritz et al., 2013; Williams et al., 2015).

Nevertheless, one of the challenges in the provision of effective music education in childhood is the level of confidence, expertise and musical self-efficacy of the teachers. A wide range of studies have reported that generalist teachers often lack confidence when it comes to organising the teaching and learning of music [e.g., Mills (1989), Hennessy (2000, 2017), Stunell (2006) and McCullough (2006) in England; Stakelum (2008) in Ireland; Ballantyne (2007), Barton (2015) and Jeanneret (1997) in Australia; Bresler (1993) in the USA, and also in non-English speaking countries, such as Austria, Italy, Netherlands and Slovenia (Biassutti et al., 2015), Portugal (Mota, 2015), and Brazil (Mateiro, 2011)]. However, there is evidence that focused instruction can improve children's singing abilities (Demorest et al., 2017; see Welch, 2016/2019 for a review), such as demonstrated by the UK Government's National Singing Programme Sing Up (2007-2012; see Welch et al., 2012).

Furthermore, a recent Australian initiative was designed to address this professional need in generalist teachers through the creation of a National Music Teacher Mentoring Program (NMTMP). This was piloted in 11 Australian primary schools, drawn from New South Wales (20-week implementation in eight schools) and Victoria (10-week implementation in three schools). The focus for the programme, undertaken with classes of children from Kindergarten through to Year 2 (ages 4-8y), was for seven specialist music educators to mentor 19 generalist classroom teachers 1:1 over one or two school terms, including mentored support in the classroom. The number of children in the mentored classes was 237, with 55 children outside the programme acting as matched controls, making a total *N* of 292. An independent evaluation focused on children's singing and attitudes to singing (Barrett et al., 2018/2020, 2019) and reported that the intervention was successful. Children in the mentored classes improved significantly over time on both measures (singing and attitudes) compared to the controls, particularly Year 1 children, irrespective of gender or socio-economic status. In addition, 36 evaluative interviews were undertaken with teachers and school principals. Analyses of responses indicated improved teacher confidence, a willingness to share their professional development with colleagues, and the positive impact on the mentee of the mentors' expertise and passion for music.

Overall, these previous studies provide positive precedents for the VOCES8 Foundation and its work in schools. 'Sing Every Day' was a project led by the VOCES8 Foundation (<https://voces8.foundation/education>) in partnership with Hackney Music Service Network (HMS) in London. The aim for the project was the development of young children's singing in two Hackney primary schools. Two

classes of 6yo children participated in each school across two school terms in 2019 (January through to July). The project was designed around regular in-school, whole-class singing sessions, underpinned by mentored Continuing Professional Development (CPD) for the participant generalist Class Teachers. Each CPD session, eight in total – four in the Spring Term and four in the Summer Term – lasted approximately one hour and was led by a professional singer from the VOCES8 team. The musical content with the participant classes drew on a portfolio of specially designed activities, including theme-based exemplar song and vocal development materials. Children from two equivalent-aged classes in another Hackney primary school who did not receive the specialist music input acted as ‘controls’ to the four ‘project’ classes. The total number of children participating were $n = 86$ in the two project schools and $n = 35$ in the control school. An evaluation of key features of the project was undertaken by a team of independent researchers from the International Music Education Research Centre (iMerc) at the University College London (UCL) Institute of Education, working in close collaboration with the VOCES8 Foundation, HMS and the three participant schools.

Methodology

The aims of the partnership were to evaluate musical and selected wider benefits of a structured singing programme in two primary schools in Hackney. The research evaluation drew on a range of established research tools in a combined, mixed methods approach (collecting quantitative and qualitative data) in order measure particular impacts in and through singing.

In terms of the features of the evaluation that are the foci for this paper, the impact assessment protocol included:

- **Demographic measures** of children’s general profiles, including data in relation to the official UK Indices of Multiple Deprivation (IMD) as applied to their localities; IMD is the official measure of relative deprivation for small areas (or neighbourhoods) in England and draws on seven domains of deprivation (Ministry of Housing, Communities and Local Government, 2019); Hackney has the second highest levels of relative deprivation of all the London Boroughs, with

just under half of its LSOAs⁴ (small neighbourhood areas) in the highest quintile (20%) nationally. Hackney also has a high proportion of its LSOAs in the most deprived 10% nationally on the Income Deprivation Affecting Children Index (IDACI) (Leeser, 2016) and has a high proportion of children from Black and Minority Ethnic (BAME) backgrounds;

- Measures of individual **children's singing behaviour** and development, drawing on elements of an established protocol (Welch, 1998) used for the five-year evaluation of the UK Government's National Singing Programme *Sing Up* (2007-2012) and which were also adapted for the NMTMP evaluation in Australia (Barrett et al., 2018/2020);
- **Reading attainment**, using in-school data; and
- Measures of aspects of participant children' **executive functions**, a multi-dimensional cognitive construct that refers to gaining strategic control over personal mental/metacognitive process, such as related to working memory, inhibition and cognitive flexibility (Bowmer et al., 2018).

All data were collected in line with the latest British Educational Research Association's (BERA) Ethical Guidelines (2018) and with formal approval from the UCL Institute of Education Research Ethics Committee (18th January 2019, No. Z6364106/2019/01/85). UCL's new ethical approval process required all the participants to provide formal agreement to take part in the evaluation. This embraced the school (headteacher), teachers, parents and children. Consequently, although all children in the focus classes took part in the VOCES8 Foundation singing activities, only a subset of these had all the elements of the ethical permissions and were available for the impact evaluation data collection. In addition, some of the children were absent or unwell on the research visit days and so had incomplete datasets. Therefore, the full analyses have been based on $n = 63$ children for whom we have complete datasets across the three schools, $n = 46$ in the intervention schools and $n = 17$ in the control school.

⁴ 'The small areas used are called Lower-layer Super Output Areas [LSOA], of which there are 32,844 in England. They are designed to be of a similar population size with an average of 1,500 residents each and are a standard way of dividing up the country. The Index of Multiple Deprivation ranks every small area in England from 1 (most deprived area) to 32,844 (least deprived area).' London: Department for Communities and Local Government (DCLG), Indices of Deprivation (2015). Typically, each LSOA in England has a population of c.1500 residents (ONS, 2010).

Main findings

Singing

Children's singing was assessed individually at two points in the programme, at the beginning and at the end. The measure of singing competency was based on a child's performance of two well-known songs, one with a limited pitch range (Twinkle, Twinkle) and the other with a more extended pitch range (Happy Birthday). Sung performance was assessed against an established four-point rating scale (Welch, 1998), subsequently converted into a normalised singing score (NSS) out of 100 for comparative analysis against other measures. The scale is a gauge of the development of in-tune (and, by implication, in-time) singing. The scale had been used previously as part of the evaluation of the National Singing Programme in England (Welch et al., 2009, 2010), as well as in earlier research with Chinese children in Hong Kong (Mang, 2003). It was also used in the recent NMTMP research evaluation in Australia (Barrett et al., 2018/2020).

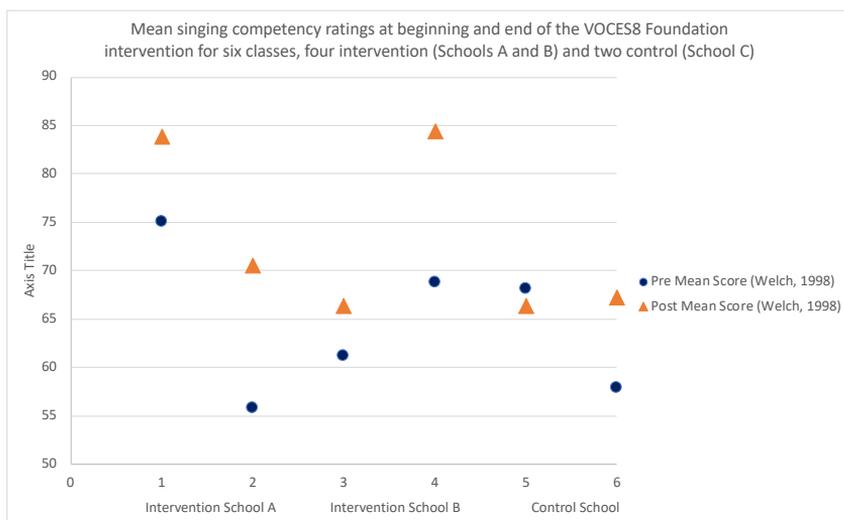


Figure 1. Mean singing competency ratings (Welch, 1998) for each of the six classes over time (the 4-point scale has been converted to out of 100; a score of 25 = speaking; a score of 100 = perfectly in-time and in-tune).

The participant children's singing was plotted against the two time points (beginning and the end of the 'Sing Every Day' project). As can be seen from the mean data in Figure 1, participants in five of the six classes (4 intervention and 1 control) had improved singing ratings by the end of the six-month project. Overall, there was a statistically significant improvement across all three schools [$F(1, 57) = 11.481, p < .001$]. In each school, there were some children who had developed their singing competency much more than others, whilst other children appeared to have made little progress. Nevertheless, collectively, the change bias over time in the overall mean distributions is positive, especially for three of the four classes in the two intervention schools.

In order to understand why children in one of the 'control' school classes also improved on average (albeit noting that this was a relatively small number of children) despite not being in a mentored class, there are two possible reasons. Firstly, it is to be expected that there may be positive changes in children's singing competency over two school terms (six months), especially in girls – as evidenced in a large national dataset of over 11,000 children (Welch et al., 2012) – and, secondly, this particular class teacher was the control school's music specialist, and so might be expected to have a strong focus on singing in her class.

The relationship between participant children's singing development and other measures

With regards any possible wider benefits that might have accrued from the singing project, analyses were undertaken of possible significant correlations between children's singing behaviours and the same children's responses on other focus measures, namely (a) in-school reading assessments and (b) aspects of Executive Function – working memory, inhibition and phonological working memory.

As can be seen from Figure 2, children's singing ratings were more positively correlated at the end of the project (blue data/right side data) with (a) their reading attainment (using in-school assessment data) ($r = .298, n = 51, p < .05$) and (b) two aspects of Executive Function that required them to draw on phonological working memory ($r = .283, n = 51, p < .05$) and inhibition ($r = .501, n = 51, p < .01$). Such statistically significant relationships were not evident at the start of the project six months earlier (green data/left side data). Separately, there were strong significant correlations between participant children's reading assessments and their Executive Function measures for working memory and phonological working memory.

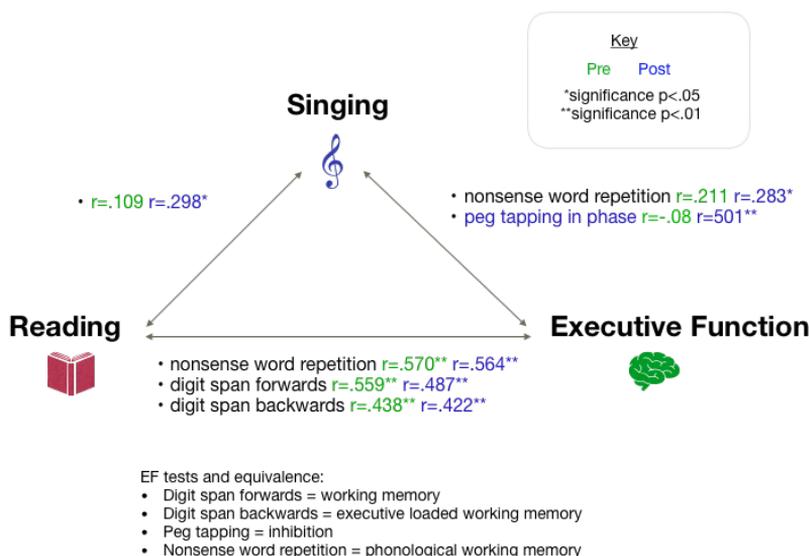


Figure 2. Correlations between participants' singing, reading and executive function data at the beginning and end of the VOCES8 Foundation 'Sing Every Day' project.

Discussion and conclusions

Although this could be considered to be a relatively small-scale research evaluation in terms of the numbers of participants for whom complete data sets are available, nevertheless, the results are encouraging, both for the VOCES8 Foundation in their community-based work in schools, and also for the wider academic community who are engaged in similar evaluative research on the potential wider benefits of music participation. Overall, the implications from the data are that the mentored classroom-based singing activities across two school terms (approximately six months) resulted in improvements in children's singing (on average)⁵, as well as possible benefits in reading and aspects of Executive Function – the latter being closely correlated to changes in the same children's reading scores. Although the underlying bases for such

⁵ Just for comparison, in the Barrett et al. (2020) Australian mentoring study mentioned in the introduction, the mean participant singing score (based on the Welch, 1998, rating scale) after the class-based intervention was 2.94, which equates to 73.5 in a normalised scale out of 100. The mean singing score for the children in the four intervention classes at the end of the 'Sing Every Day' programme was virtually identical at 76.2.

a potential combination of relationships needs more detailed exploration, the findings are in line with that reported elsewhere in the literature for pairs of elements (singing and reading, singing and Executive Functions).

In addition, separate qualitative research data⁶ analyses suggest that the participant generalist teachers and their teaching assistants collectively benefited from being mentored by professional singers who drew on an experienced background in working with children and in offering school-based support as part of their portfolio careers (cf Barrett et al., 2019; Saunders et al., 2011). This was evidenced in our observations of the teachers' own singing in their classes in the absence of their mentors and also from the staff comments about their positive experiences on the project⁷. Even though they might still feel nervous and apprehensive about singing with their classes at times, each reported a greater willingness to undertake such activity having had this professionally structured experience, not least because the 'Sing Every Day' project culminated in a morning workshop and lunchtime public performance in a City of London church next to St Paul's Cathedral in front of an invited audience of parents, staff and friends. Furthermore, the Foundation reports that, five months after the final mentored workshops, subsequent school visits to the two intervention schools have revealed that the teachers are continuing to sing every day with their pupils, and that colleagues in other classes have begun to include singing more regularly in their own curricula.

The findings from this research evaluation contribute to the emerging picture of potential wider benefits of music in general, and singing in particular, to children's overall development (as well as across the lifespan). The possible links between singing, reading competency and Executive Functions have been reported separately elsewhere (see above), but this is one of the first studies to explore these aspects collectively. The results are encouraging and provide a basis for further exploration as we seek to understand what it is about the sung (musical) experience that can be more (or less) effective in nurturing both musical competence and also wider development.

⁶ Because of space limitations in this ISME Research Commission Seminar submission, examples of the observational and interview data can be found in our main evaluation report to the VOCES8 Foundation which they will publish.

⁷ A video of the 'Sing Every Day' programme was commissioned to capture essential elements of the experience for participants. This includes oral feedback from the participant non-specialist teachers on the impact for them. The video is available for public access at:

<https://voces8.foundation/sing-everyday> and on YouTube
<https://www.youtube.com/watch?v=9je678yMaFo>

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Diversity Content in Undergraduate Music Education Course Descriptions in the United States

Jennifer A. Whitaker

Department of Music, University of North Carolina at Charlotte, USA

Abstract

The purpose of this descriptive study was to determine the extent to which diversity content is incorporated into music teacher preparation programs in the United States based on professional teaching courses catalog descriptions and to highlight what content appears most frequently. Analysis of 928 course descriptions representing 94 universities from all 50 states revealed 250 (27%) course descriptions contained diversity content. No diversity content was found in course descriptions of four universities. For descriptions that contained diversity content, the most frequently observed diversity keywords were special education (38%), diverse/diversity (26%), cultural/culture (25%), disability/disabled/abilities (21%), multicultural/multiculturalism (14%), and language/bilingual education (11%). All other keywords appeared in less than 10% of course descriptions. Content regarding gender, socioeconomic status, race, ethnicity, and sexual orientation are seemingly underrepresented in course descriptions. Findings indicate that most US undergraduate music education programs in this sample are incorporating some diversity content into their curricula.

Keywords: diversity, course descriptions, music teacher preparation.

Introduction

Meaningful change requires time. Historically, change in United States (US) society occurs when long held beliefs and practices are challenged in the court system. For example, the Education for All Handicapped Children Act (1975), now known as the Individuals with Disabilities Education Act (2004), was enacted by Congress following landmark decisions in lawsuits such as the Pennsylvania Association for Retarded Citizens v. Commonwealth of Pennsylvania in 1971 and Mills v. Board of Education of the District of Columbia in 1972, which made states accountable for providing a public

education to children with intellectual disabilities and those with mental, behavioral, physical or emotional disabilities, respectively (Disability Justice, 2019).

As states began providing services to these students, it became important for teachers to be well-versed in supporting their individual needs, including for those in inclusive environments. The responsibility for ensuring teachers are proficient in teaching students with disabilities is predominantly expected to occur with teacher preparation programs. Many programs offer coursework that specifically addressed students with disabilities as well as English language learners (United States Government Accountability Office, 2009; Will, 2018). However, as US society continued to evolve, training teachers to support students' learning based on other diverse characteristics (e.g., race, ethnicity, globalization, gender identity) was also needed (Fortunato et al., 2018).

As diversity awareness increased, music researchers began exploring diversity and social justice topics (e.g., Benedict et al., 2015) and how music teachers could support diverse students' learning. One such approach, Culturally Responsive Education (CRE), was the content of a recent review of music literature (Bond, 2017). Suggestions included providing opportunities for authentic music making based on multiple cultures, linking in- and out-of-school musical experiences, and redesigning preservice preparation programs to infuse diversity issues throughout coursework. Similarly, Robinson (2017) focused on developing preservice music teachers' understanding of their future students' diverse characteristics. She cited the need to find ways to strengthen their ability to support learning in increasingly ethnically and culturally diverse classrooms as the impetus for her designing activities that (1) developed an awareness of differences in ease of access to resources, (2) examined the intersectionality of participants' cultural categories (e.g., gender, race, social class, ability) and how power shifted within systems of domination/oppression based on those categories, and (3) how socioeconomic factors impacted the academic achievement of students of color.

While these researchers addressed music teacher preparation, research regarding varying diversity related content within music education is prevalent. Researchers have examined gender-based instrument stereotypes (e.g., Abeles et al., 2014; Kelly & VanWeelden, 2014; Wrape et al., 2016; Wych, 2012), gender inequalities (e.g., de Boise, 2018), and elementary teachers' perceptions of how gender functions within their music classrooms (Roulston & Misawa, 2011). Gender was also a commonly examined factor in quantitative analyses in music research (e.g., Ebie, 2002).

More recently, researchers investigated gender in terms of transgender experiences in music including one who initially participated in a public school music program and later found composition and songwriting to be an effective emotional outlet (Nichols, 2013), experiences as an undergraduate music education major (Silveira, 2019) and as a music education major entering the field (Bartolome, 2016). Palkki and Sauerland (2019) described bullying experienced by transgender students and outlined the complexity of gender. Researchers also examined how music teacher educators can support transgender students (Palkki, 2017; Palkki & Sauerland, 2019). Silveira and Goff (2016) found music teachers' attitudes towards transgender individuals to generally be positive, with females reporting more positive attitudes than their male counterparts. Interest in sharing information about the transgender voice led to the organization of The Transgender Singing Voice Conference, which provided attendees with knowledge of vocal production, pedagogy, physiology, and transgender singers' identities (Cayari, 2019).

Similar to investigations involving transgender individuals, researchers examined the experiences of people who identify as gay and lesbian. An early study by Taylor (2011) described the experience and perceptions of 10 gay and lesbian band directors in terms of disclosing their sexual orientation, while McBride (2016) described how two male self-identified gay choral directors dealt with and perceived gender within their classrooms through the lens of their sexuality. Paparo and Sweet (2014) examined the disclosure choices and experiences of two gay and lesbian preservice music teachers. Preservice music teachers who identified as LGBTQ struggled with whether to be open about their identity within the classroom (Taylor, 2018). Carter (2013) identified several themes among the discourse of four African American gay students enrolled in marching bands at different historically Black colleges or universities including, but not limited to, deficiency and rejection, being assumed to be heterosexual, and learning coping strategies. An additional emergent theme focused on stereotypes and expectations of the four students based on race, as strong African American men.

Researchers also documented issues based on race in terms of student participation and teaching practices. Elpus and Abril (2011) examined demographics of US students participating in high school ensembles and found White students participated significantly more frequently than students of other races and ethnicities. Using a critical race lens Hess (2017a) examined four inclusive music teachers' programs noting that they emphasized non-Western repertoire; acknowledged

students' varying intersectionality and privilege within classroom activities; and addressed inequity through critical conversations regarding race, class, and gender with their students. She also highlighted the inherent power structures between teachers and students and that not all teachers possess identical freedoms within their classrooms. White teachers were often lauded for anti-racist work while teachers of color undertaking similar work were often met with opposition. Themes from other case studies highlighted possible ways to break down oppressive practices within the music classroom including teaching a wide range of musics, incorporating activities that were not reliant on Western notation and elements, and providing context, sociocultural and sociohistorical, for the music being studied (Hess, 2018). Hess (2017b) also highlighted the need for explicit and direct discussion regarding race rather than using vague and generalized terms (e.g., cultural factors) in order to move towards action in making music in schools for everyone.

Researchers have also considered race in tandem with socioeconomic status. Bates (2019) discussed the intersectionality of race and social class citing evidence that higher percentages of people of color live in poverty than do White people and that this directly impacts music education. Students from higher socioeconomic status families participate more frequently in school music than those from low socioeconomic status families (Elpus & Abril, 2011). However, Bates (2018) suggests music teachers can equalize socioeconomic disparities by learning about the musical interests and traditions of their less affluent students, teaching courses that reflect how people typically engage with music, not requiring fees for participation, tying value to making music itself, and using music to teach about economic disparities. Although music education historically functioned in terms of classicism, music can empower socioeconomically marginalized students (Bates, 2017).

One way to ensure students understand diversity is through university coursework. Courses designed specifically for developing diversity related knowledge are important in highlighting this content. In order to determine trends in content, social work researchers examined verbiage present in course titles, syllabi content, and course objectives covered in social work courses. In an analysis of 31 syllabi representing 26 social work programs, Hong and Hodge (2009) found most syllabi contained the keywords social justice (90.3%) followed by oppression (83.9%); racial minority (80.7%); women (80.7%); gay/lesbian/sexual orientation (77.4%); physical/mental disabilities (74.2%); social class and practice (67.7% each); social change, values, and ethics (64.5% each); and economic diversity and aged (61.3%). All

remaining keywords appeared in less than 60% of the syllabi examined. Teasley and Archuleta (2015) examined 174 course syllabi representing 172 programs and found most frequently occurring terms included culture/multicultural (79.2%), race (71.7%), diversity (68.2%), ethnicity (63.6%), gender (60.1%), oppression (57.8%), and gay/lesbian (56.1%), while inequality (22.5%), women's issues (26%), minority (26.6%), prejudice (31.2%) and religion (31.8%) occurred far less frequently. Examining what content is covered in courses as this content implicitly informs students' perceptions and values.

Given the breadth of knowledge needed to appropriately support all learners as classrooms become increasingly diverse, determining what, if any, diversity content music teacher preparation programs include is important. This may serve as a measure of how well these programs are preparing our preservice music teachers for dealing with increasingly diverse classrooms. Therefore, the purpose of this study was to determine the extent to which diversity content is incorporated into music teacher preparation programs based on course catalog descriptions and to highlight what content appears most frequently.

Methods

In order to include music teacher preparation programs from across the US, I searched online for universities within each state using "University of X" and "X State University" for each of the 50 states (e.g., University of Alabama, Alabama State University). In less populated and smaller states, only one university was identified (e.g., Alaska, Delaware, Hawaii). For instances in which multiple campuses existed, the campus with the largest student population was selected (e.g., University of Alabama - Tuscaloosa). I identified a total of 94 music programs representing all 50 states for inclusion after confirming they offered undergraduate music education degrees including Bachelor of Arts with Music Education Certification, Bachelor of Science in Education with Concentration in Music, Bachelor of Music Education, Bachelor of Music in Music Education, and Bachelor of Fine Arts in Music Education. Required credits for graduating from these programs ranged from 113 to 189 and 96% were accredited by the National Association of Schools of Music.

I included course titles and descriptions from each university's current online course catalog for required professional teaching courses (i.e., courses that focus on various aspects of teaching and learning). I analyzed course descriptions using an

inductive approach first by determining whether the description contained diversity content and second, if so, notated the keyword(s) used. For descriptions containing multiple keywords, each was counted separately. Frequency counts for terms used across programs were calculated. Researchers used an identical process when employing content analysis in previous music studies (e.g., Orman & Price, 2007; Price & Orman, 1999, 2001; Whitaker et al., 2012; Yarbrough & Whitaker, 2009). Similar to Hong and Hodge (2009) and Teasley and Archuleta (2015), closely related keywords were grouped together for analysis (e.g., special education included special needs, exceptionalities, exceptional learners).

Results

I analyzed a total of 928 undergraduate professional teaching courses ($M = 9.87$ per university, range = 4 - 17). Of those, 250 (27%) contained diversity content ($M = 2.66$ per university, range 0 - 12). Seventy-two (29%) had music prefixes which indicates those courses are likely taught within the music school or department. Four universities offered no required coursework that explicitly contained diversity content. The remaining universities offered at least one course.

Most course descriptions contained one diversity keyword (e.g., "Designed to meet the needs of education majors for a required course in special education."). Others indicated greater breadth of content; for example:

...the nature and function of culture and social class in schooling; ethical strategies for observing, analyzing, and comparing differences related to ethnicity, race, class, persons with exceptionalities, gender and sexual identity, religion, and language; the influences of culture on learning, development, and pedagogy; ways to develop a culturally responsive classroom.

Seventy-three (29%) course descriptions contained multiple diversity keywords (e.g., "...intersectionality of race, class, gender, sexuality and the educational experience of non-dominant racial, cultural, and socioeconomic groups") indicating variation in the broadness of diversity content addressed.

The most frequently observed diversity keywords within course descriptions were special education (38%, $n = 96$), diverse/diversity (26%, $n = 64$), cultural/culture (25%, $n = 63$), disability/disabled/abilities (21%, $n = 53$),

multicultural/multiculturalism (14%, $n = 34$), and language/bilingual education (11%, $n = 27$). All other keywords appeared in frequency less than 10% including inclusive/inclusion (6%, $n = 16$), gender/gender identity (6%, $n = 15$), equality/equitable (6%, $n = 14$), social class/socioeconomic status (5%, $n = 13$), race (4%, $n = 11$), ethnicity (3%, $n = 8$), sociopolitical/political (3%, $n = 8$), pluralistic communities (3%, $n = 7$), global (2%, $n = 6$), religion (2%, $n = 6$), urban (2%, $n = 6$), social justice (2%, $n = 5$), discrimination/prejudice (2%, $n = 5$), sexuality/sexual orientation (2%, $n = 5$), and bias (2%, $n = 4$). The following keywords appeared in 1% or fewer course descriptions: marginalized populations/minority, stereotypes, access, civil rights, geographic location, age, desegregation, and national origins.

Discussion

The purpose of this study was to determine the extent to which diversity content is incorporated into music teacher preparation programs in the US based on course catalog descriptions. All but four programs required coursework that incorporated diversity content. Of the 928 professional teaching course descriptions analyzed, 250 contained explicit statements of diverse content, most frequently addressing single topics. It is possible that additional coursework includes diversity content but that the specific content was not explicitly stated in the description. For example, a course on legal issues in education may cover diversity related laws but the course description may not include the specific content.

A secondary purpose was to determine the content that appears most frequently. Similar to previous studies of diversity content (Hong & Hodge, 2009; Teasley & Archuleta, 2015), a variety of keywords were identified in this study, indicating a breadth of awareness and highlighting the importance of the content. Special education keywords occurred most frequently across university programs. Adding the category of disability/disabled/abilities to special education represents almost 60% of the course descriptions. This is not surprising given that laws requiring the inclusion of students with disabilities in classrooms have been in existence for over four decades in the US (Education for All Handicapped Children Act, 1975). However, many other keywords appear on a much less frequent basis. Content regarding gender, socioeconomic status, race, ethnicity, and sexual orientation appear in less than 10% of course descriptions. These and other topics are seemingly underrepresented in course descriptions.

The findings of this study indicate that most US undergraduate music education programs are incorporating diversity content into their curricula as only four of the 94 universities in this sample did not require courses containing this content. However, caution in generalizing the results is warranted as course descriptions may not provide full details of course content. Still, course descriptions do provide students with a basic understanding of what they can expect to learn within a class. This necessitates careful consideration when writing course descriptions. If a course includes diversity content but it is not specified in the description, the importance of the content may be lessened.

The amount of time spent on specific content in classes may indicate its value. Therefore, the inclusion of diversity content in preservice music educator coursework could highlight the importance of understanding students' individual differences in the teaching and learning process for future teachers. Given that preservice teachers can learn and understand diversity concepts (Robinson, 2017), and that extant research highlights successful practices of music teachers who incorporate equitable practices (Bates, 2018; Hess, 2017a, 2017b, 2018), it seems those involved in teacher preparation programs need to ensure preservice music educators receive diversity education. Thus, increasing the probability that they will become more effective teachers and have a positive impact on all students as classrooms become more diverse.

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Music Teacher Motivation, Satisfaction, and Success: Cross-Cultural Comparison of Africa, Asia, Europe, and America

Debbie Lynn Wolf¹, Cecil Adderley², Karlin Love³

¹Cairn University, USA

²Berklee College of Music, USA

³The University of Queensland, Australia

Abstract

Music teachers' perceptions of motivation, satisfaction, and success in the music education profession have been explored from various perspectives, but with few cross-cultural comparisons. The purpose of this research is to compare perspectives on motivation, satisfaction, and success in teaching music among in-service music teachers from around the world ($N = 105$). Music teachers currently teaching in preschool through 12th grade (P-12) public and private schools in Africa ($n = 15$), Asia ($n = 30$), Europe ($n = 38$), and North/South America ($n = 24$) completed a web-based survey following an emailed invitation. Results indicate that music teachers from all groups describe music education as a satisfying, and rewarding career. Most respondents expressed satisfaction in their decision to become a music teacher, and plan to continue teaching until retirement. Similarities among the groups were noted in the perceptions of satisfaction with the profession, self-ratings of successful teaching, and selection of successful teaching characteristics. Most respondents selected *teaching skills and knowledge* as the most important characteristic of successful teachers. Differences among African, Asian, European, and American respondents were revealed in their motivation: why they chose to become music teachers, when they decided to enter the profession, who influenced their decision, and why they remain in the profession. Differences were also noted in their perceptions of challenges, administration and student ratings, and their reasons for student success. While some cultural distinctions among music teachers were revealed in this study, other perceptions transcend cultural differences: most respondents expressed satisfaction and commitment to the profession, and the importance of quality instruction. Findings revealed that most respondents consider music teaching to be a meaningful, rewarding, and satisfying career. Results of this study can encourage pre-service and in-service teachers, serve to advocate for the profession, and offer direction in cultivating motivation, satisfaction and success for all music teachers through teacher training programs and professional development.

Keywords: music teachers, motivation, satisfaction.

Introduction

Success in teaching music has been explored in many directions: some researchers have focused on teacher processes, including styles, interactions, and characteristics (e.g., Gardner, 2010; Miksza et al., 2010; Russell, 2012; Sogin & Wang, 2002), while others have focused on teacher products, such as student outcomes and teacher effects (e.g., Saber et al., 1991; Teachout, 1997). This variation in research direction reflects the multi-faceted and complex understanding of what successful music teaching encompasses. Successful teaching has been described with numerous terms in the literature (e.g., competence, performance, effectiveness), which reflects the diversity of perspectives among music teachers, but also contributes to the difficulty to comprehensively define “the great music teacher” (Brand, 2009).

Successful teaching seems to correlate with the capacity to find purpose and realize achievement (Heston et al., 1996; Johnson & Birkeland, 2003), and share the rewards of student motivation and accomplishment (Gottfredson et al., 1995; Legette, 2012). Music teachers have characterized successful music teaching by excellent general teaching skills, personal qualities, and methodology more than by music skills (e.g., Mills & Smith, 2003; Miksza et al., 2010; Rohwer & Henry, 2004; Teachout, 1997).

Researchers have found that successful music teachers build relationships and connect with students, think independently, focus on achievement, teach creatively, adapt instruction to meet student needs, prepare thoroughly for class, and introduce high standards of quality music – all with passion to motivate and inspire learning (e.g., Brand, 2009; Grant & Drafall, 1991). Passion is a key component: teachers’ passion for music, students, and the interaction of teaching/learning provides the foundation for success (Brand, 2009).

Passion and positive attitudes establish conditions for success and channel potential and effort toward appropriate goals and satisfaction; whereas, negative attitudes result in a lack of success for teachers and students (Battersby & Cave, 2014; Han & Leung, 2017). Teachers’ attitudes are affected by their personal musical preference, students’ responses, teaching responsibilities, job market, and professional training (Han & Leung, 2017; Olufemi, 2012). Music teachers have identified to be most adversely affected by the following challenges: unsupportive administration (Madsen & Hancock, 2002; Scheib, 2003, 2006), non-instructional responsibilities (e.g., Gordon, 2000; Johnson & Birkeland, 2003; Krueger, 2000; Sindberg & Lipscomb, 2005), salary concerns (Gardner, 2010; Hancock, 2008; Madson & Hancock, 2002), and lack of time (Wolf et al., 2018).

These challenges must be outweighed by a compelling motivation for a music teacher to remain in the profession (Fresko et al., 1997; Gardner, 2010). Motivation for teaching music has been identified to include a love for music and teaching, working with young people, making a difference in student lives, and emulating an influential role model (e.g., Ballantyne et al., 2012; Madsen & Kelly, 2002; Thornton & Bergee, 2008). Motivation for teaching music is most often developed during high school with the powerful role model of a highly successful music teacher (e.g., Jones & Parkes, 2010; Kelly, 2000; Madsen & Kelly, 2002; Thornton & Bergee, 2008).

While researchers have identified characteristics of successful music teachers from various vantage points – those of students, pre-service teachers, in-service teachers, administrators, professors (e.g., Baker, 2007; Conway, 2002; Legette, 2012), most focus on perspectives of respondents from the same country; few studies have explored perspectives on motivation, satisfaction, and success of music teachers cross-culturally.

In one of these few studies, Brand (2006) investigated teaching effectiveness of fifteen music teachers from nine countries in Asia, and found that despite cultural differences, all teachers possess an assemblage of diverse qualities, an underlying powerful connection with students, high energy and enthusiasm, and the willingness to devote time and effort for preparation and planning.

Successful teaching practices begin with appropriate pre-service preparation, but because music programs and curriculum of each country differ, appropriate preparation in universities also differs, reflecting cultural values and perceived needs of schools and students (Royce et al., 1999). Yet instead of vast differences, research demonstrates numerous commonalities, especially an emphasis on content, methodology, and applied practice (Brand, 2006; 2009; Royce et al., 1999). Research also reveals a common trend of adopting Western teacher training models and an emphasis of Western classical music by many teacher training programs (Royce et al., 1999). Cultural ideologies affect teachers' perceptions of curriculum and teaching (Shkedi & Nisan, 2006), and yet, some perceptions transcend these differences. Wolf et al. (2018) report similarities between perceptions of music teachers from Australia and USA on motivation and satisfaction: few differences were noted despite distinctions in culture and music education systems.

Will music teachers from around the world differ in their perceptions of successful music teaching? The present study addressed this question by asking music teachers in 40 countries to complete an on-line survey on various aspects of successful

music teaching. The present manuscript focuses on the comparison of the perspectives from music teachers around the world, with the exception of respondents from Australia and USA, who were described in a previous study. The purpose of this research is to compare perspectives on motivation, satisfaction, and success among music teachers from Africa, Asia, Europe, and America.

Methods

Data were collected via a web-based survey of music teachers currently teaching in P-12 grades in public and private schools in Africa, Asia, Europe, and North/South America (excluding USA/Australia) as part of a larger study examining characteristics of successful music teaching. Questions were derived from related studies on successful teaching characteristics, motivation, and job satisfaction (Gardner, 2010; Miksza et al., 2010; Russell, 2012; Teachout 1997), and required various types of responses: rating scale, multiple choice, forced-choice, and open-ended (the last omitted here in deference to space).

A pilot study was conducted ($N = 20$), reviewed, and revised by two music education professors experienced in research and survey design. The revised version was piloted ($N = 27$), then emailed to leading figures from national and international music associations, who were asked to invite colleagues to participate in the survey through a link powered by Google Forms (<https://docs.google.com/forms>). Instructions were included in the invitation and the survey's opening paragraph.

Results

Participants completing the survey ($N = 105$) identified themselves as currently employed P-12 school music teachers. Demographic characteristics of the respondents are reported in Table 1.

Attribute	Africa n=15	Asia n=30	Europe n=38	America n=24
Gender				
Female	40%	50%	50%	38%
Male	60%	20%	17%	33%
Declined to answer	0%	30%	33%	29%
Level of education				
Bachelor's	47%	40%	44%	42%
Master's	27%	57%	44%	46%
Doctorate	7%	3%	11%	13%
No traditional degree	20%	0%	0%	0%
Years of teaching experience				
<4	-	23%	6%	21%
4-9	53%	37%	31%	33%
10-19	33%	13%	19%	17%
20-29	-	20%	22%	21%
30+	13%	7%	22%	8%
Type of School				
Public/government	33%	13%	67%	46%
Private/independent/religious	67%	87%	31%	54%
Work hours per week				
<30	47%	37%	66%	37%
30+	53%	63%	34%	63%
Grade level assignments				
Preschool	47%	23%	25%	33%
Elementary	73%	80%	61%	71%
Middle School	27%	23%	44%	21%
High School	60%	57%	56%	38%
Course assignments				
General Music	67%	77%	78%	79%
Choral ensembles	47%	50%	64%	50%
Band/wind ensembles	20%	27%	19%	17%
Orchestral ensembles	40%	23%	31%	4%
Theory	87%	27%	72%	38%
History/appreciation	40%	27%	44%	33%
Technology	7%	7%	17%	8%
Composition	27%	20%	53%	21%
Piano/keyboard	67%	20%	58%	42%
Guitar/ukulele	7%	7%	11%	29%
Instrumental lessons	53%	40%	53%	29%
Musicals/drama/theatre	13%	17%	33%	38%
Jazz band	-	10%	3%	4%

Special education	13%	7%	8%	13%
Chamber music	7%	10%	25%	17%
World drumming	13%	10%	22%	21%
Alternative ensembles	7%	10%	22%	13%
Dance	13%	-	3%	17%
Non-music courses	-	7%	6%	8%

Table1. Demographics of respondents from Africa, Asia, Europe, North/South America.

Motivation

Respondents answered questions about their motivation to become and remain working as a school music teacher by selecting from a list of reasons. Respondents differed among groups in their selection of the primary reason for their decision to teach music from among these options: *love of music and teaching* (Africa = 13%; Asia = 40%; Europe = 55%; America = 25%); *desire to help others* (Africa = 39%; Asia = 40%; Europe = 31%; America = 55%); *inspired by others* (Africa = 26%; Asia = 13%; Europe = 6%; America = 16%); *financial security* (Africa = 0%; Asia = 0%; Europe = 0%; America = 4%). Most European respondents chose *love of music and teaching*; most African and American respondents chose *desire to help others*; Asian respondents chose both reasons equally.

Respondents also differed among groups in their selection of three primary reasons why they continue to teach music from among these options: *student growth and success* (Africa = 40%; Asia = 40%; Europe = 61%; America = 21%); *relationships with students* (Africa = 33%; Asia = 53%; Europe = 31%; America = 42%), *development of the music program* (Africa = 47%; Asia = 33%; Europe = 11%; America = 17%), *enjoyment* (Africa = 40%; Asia = 30%; Europe = 47%; America = 21%); *personal development, success, and accomplishment* (Africa = 40%; Asia = 40%; Europe = 28%; America = 67%), *financial security* (Africa = 20%; Asia = 20%; Europe = 25%; America = 17%), *creative and artistic opportunities* (Africa = 47%; Asia = 37%; Europe = 33%; America = 33%), *working conditions and environment* (Africa = 7%; Asia = 17%; Europe = 6%; America = 8%), *convenient schedule* (Africa = 0%; Asia = 7%; Europe = 6%; America = 4%), and *colleagues* (Africa = 0%; Asia = 7%; Europe = 6%; America = 0%).

Respondents differed among groups on the age when they decided to become music teachers: years prior to high school (Africa = 13%; Asia = 6%; Europe = 11%; America = 25%); during high school (Africa = 33%; Asia = 43%; Europe = 22%; America = 38%); university years (Africa = 13%; Asia = 17%; Europe = 22%; America =

33%), and post-university (Africa = 40%; Asia = 33%; Europe = 44%; America = 4%). Most respondents from Asia and America selected high school, while most respondents from Africa and Europe selected post-university.

Respondents differed among groups on who they identified as most influential in their career choice: school music teachers (Africa = 13%; Asia = 33%; Europe = 25%; America = 29%); family/friends (Africa = 47%; Asia = 27%; Europe = 17%; America = 21%); college/university professors (Africa = 27%; Asia = 13%; Europe = 11%; America = 17%); private music teachers (Africa = 0%; Asia = 3%; Europe = 25%; America = 25%); non-music teachers and administrators (Africa = 0%; Asia = 0%; Europe = 6%; America = 0%). Asian and American respondents identified school music teachers as most influential, while African respondents identified family/friends, and European respondents identified both school music teachers and private music teachers.

Satisfaction

The vast majority (Africa = 86%; Asia = 93%; Europe = 97%; America = 100%) of respondents indicated satisfaction with their career choice. Respondents rated satisfaction using a 5-point scale: *very satisfied* (Africa = 53%; Asia = 53%; Europe = 53%; America = 75%); *satisfied* (Africa = 33%; Asia = 40%; Europe = 44%; America = 25%); *not sure* (Africa = 13%; Asia = 7%; Europe = 3%; America = 0%); none selected *dissatisfied/very dissatisfied*.

Asked how long they were likely to remain teaching school music, most respondents selected *until retirement* (Africa = 40%; Asia = 60%; Europe = 64%; America = 46%), except for African respondents who selected *until retirement* equally with *5-10 years*. Respondents selected the following: 5-10 years (Africa = 40%; Asia = 13%; Europe = 22%; America = 13%), 10-20 years (Africa = 20%; Asia = 7%; Europe = 8%; America = 25%), and 20-30 years (Africa = 0%; Asia = 13%; Europe = 3%; America = 4%). Few respondents plan to leave in less than five years (Africa = 0%; Asia = 7%; Europe = 3%; America = 13%).

Asked to identify their greatest challenges in teaching, respondents differed in their selections, prioritizing challenges differently among groups (Table 2).

Success

Respondents described their perceptions of student and administration ratings of their teaching by using a 5-point scale. Student ratings were perceived to be excellent

(Africa = 20%; Asia = 13%; Europe = 14%; America = 17%); very good (Africa = 53%; Asia = 60%; Europe = 69%; America = 79%); good (Africa = 27%; Asia = 27%; Europe = 14%; America = 4%); fair (Africa = 0%; Asia = 0%; Europe = 3%; America = 0%) with no poor ratings. Administration ratings were perceived to be excellent (Africa = 27%; Asia = 20%; Europe = 33%; America = 29%); very good (Africa = 40%; Asia = 53%; Europe = 56%; America = 63%); good (Africa = 27%; Asia = 23%; Europe = 6%; America = 8%); fair (Africa = 1%; Asia = 3%; Europe = 6%; America = 0%). Likewise, respondents rated their own teaching: excellent (Africa = 13%; Asia = 3%; Europe = 6%; America = 13%); very good (Africa = 47%; Asia = 50%; Europe = 61%; America = 58%); good (Africa = 33%; Asia = 37%; Europe = 33%; America = 29%); fair (Africa = 7%; Asia = 10%; Europe = 0%; America = 0%). Respondents differed among groups in perceptions of student and administrative ratings; but self-ratings differed within only 10 percent among groups.

Greatest challenges	Africa n=15	Asia n=30	Europe n=38	America n=24
Lack of time	53%	33%	42%	50%
Lack of resources and materials	53%	17%	22%	58%
Poor facilities	40%	30%	31%	46%
School schedule conflicts	53%	30%	25%	29%
Inadequate salary	60%	27%	17%	29%
Distraction of non-musical tasks	33%	37%	42%	13%
Developing music literacy in all students	40%	23%	25%	33%
Assisting all students in meeting individual goals	40%	27%	17%	33%
Making material meaningful	27%	27%	28%	33%
School administration	27%	17%	31%	21%
Classroom management	20%	30%	14%	4%
Transcending mediocrity	7%	17%	8%	21%
Building relationships with every student	7%	17%	8%	17%
Teaching unfamiliar topics and genres	20%	7%	6%	4%
Student retention	13%	7%	11%	4%
Lack of organizational skills	13%	7%	6%	-

Table 2. Greatest challenges in teaching selected by respondents from Africa, Asia, Europe, and North/South America.

Respondents selected *teaching skills and knowledge* (Africa = 33%; Asia = 37%; Europe = 33%; America = 50%) as the most important characteristic of successful music teaching from among these options: *personal skills and qualities* (Africa = 27%; Asia = 20%; Europe = 22%; America = 17%); *music skills and knowledge* (Africa = 27%; Asia = 30%; Europe = 28%; America = 13%); and *teaching perspective and philosophy* (Africa = 13%; Asia = 13%; Europe = 17%; America = 21%).

Respondents selected among four options as most important for student success in school music: *quality of instruction and training student receives* (Africa = 53%; Asia = 23%; Europe = 44%; America = 50%); *student's persistence* (Africa = 27%; Asia = 43%; Europe = 39%; America = 25%); *student's passion* (Africa = 20%; Asia = 33%; Europe = 17%; America = 25%); *student's natural talent* (Africa = 0%; Asia = 0%; Europe = 0%; America = 0%). Most respondents from Africa, Europe, and America selected *quality of instruction and training the student receives*; whereas most respondents from Asia selected *student's persistence*.

Respondents selected among the same options as most important for student success in future music experiences: *quality of instruction and training the student receives* (Africa = 47%; Asia = 33%; Europe = 25%; America = 38%); *student's persistence* (Africa = 27%; Asia = 37%; Europe = 42%; America = 33%); *student's passion* (Africa = 27%; Asia = 30%; Europe = 28%; America = 29%); *student's natural talent* (Africa = 0%; Asia = 0%; Europe = 3%; America = 0%). Most respondents from Africa and America selected *quality of instruction and training the student receives*; most respondents from Asia and Europe selected *student's persistence*.

Discussion

This study examined perspectives of music teachers from around the world, but results may be particular to the specific locale of the limited number of respondents: caution is needed in interpreting results because of the relatively small sample size.

Results indicate most European respondents selected *love of music and teaching* while most African and American respondents selected *desire to help others* as the primary reason for deciding to teach music; Asian respondents were equally divided between both reasons. Wolf et al. (2018) found that Australian and USA respondents selected *love of music and teaching* as the primary reason for deciding to teach music, but the *desire to help others* is also in agreement with previous research (e.g., Ballantyne et al., 2012; Jones & Parkes, 2010; Thornton & Bergee, 2008).

Reasons why they remain in the profession appear to reveal cultural differences: most African respondents selected both *development of the music program* and *creative and artistic opportunities*; most Asian respondents selected *relationships with students*; most European respondents selected *student growth and success*; most American respondents selected *personal development, success, and accomplishment*. Respondents from Australia and USA selected *student growth and success* most frequently, and rated the majority of reasons similarly (Wolf et al., 2018). Differences in the present study are not surprising because of the effect of cultural ideologies (Shkedi & Nisan, 2006) and diverse background experiences (Han & Leung, 2017; Olufemi, 2012).

Diversity among groups in when the decision to enter the profession was made and who influenced this decision may reflect cultural values, as did results from Australia and USA (Wolf et al., 2019). Previous research supports high school as the most common time, and school music teachers as most influential in the career choice of music teachers (e.g., Jones & Parkes, 2010; Madsen & Kelly, 2002; Thornton & Bergee, 2008). The varied university experiences, teacher training programs, and certification requirements in other countries may contribute to the number of respondents who chose post-college (Royse et al., 1999; Wolf et al., 2019). Respondents in this study may have had more diverse experiences affecting when they decided and who influenced their decision (Royse et al., 1999; Wolf et al., 2019).

Most respondents are satisfied with their decision to teach music and are committed to remain in the profession until retirement. Satisfaction with career choice and commitment to the profession reflects previous studies, regardless of cultural background (Fresko et al., 1997; Gardner, 2010; Madsen & Hancock, 2002; Wolf et al., 2019).

While Australian and USA respondents shared similar challenges (Wolf et al., 2019), respondents in this study prioritized challenges differently among groups. The greatest challenges revealed in previous research (Johnson & Birkeland, 2003; Krueger, 2000; Sindberg & Lipscomb, 2005; Wolf et al., 2019) were not necessarily perceived as greatest by all groups in the present study, but additional challenges were perceived to include *lack of resources and materials*, and *poor facilities*. Economic factors, in addition to cultural values, may contribute to these differences.

Most respondents reported perceptions of positive ratings of administrators, students, and self; this is expected with the high percentage of reported satisfaction and commitment to the profession as reflected in previous research (e.g., Baker, 2007; Gardner, 2010). Perceptions align with findings of Australia and USA: while

perceptions of others' ratings differ among groups, self-ratings are similar (Wolf et al., 2019).

Respondents prioritized teaching skills as more important than music skills, regardless of culture, reflecting previous studies (e.g., Mills & Smith, 2003; Miksza et al., 2010; Rohwer & Henry, 2004; Teachout, 1997).

Most respondents, with the exception of respondents from Asia, attributed *quality of instruction and training* for student success in school music; this aligns with results from Australia and USA (Wolf et al., 2019). Contrasting perspectives among all groups on student success in future music experiences also align with the contrasting perspectives reported between Australia and USA (Wolf et al., 2019). Cultural differences in teacher/student relationships may account for these differences: cultural ideologies may affect specific perceptions of curriculum and teaching as observed by Shkedi and Nisan (2006).

While differences may be expected in light of cultural values and unique music experiences, the overall positive perspectives expressed in this study provide assurance of the global gratification of the music education profession, despite numerous and diverse challenges.

Results of this study can encourage pre-service and in-service teachers, serve to advocate for the profession, and offer direction in cultivating motivation, satisfaction and success for all music teachers through teacher training programs and professional development. Further research should encompass a greater number of respondents from various locations to provide a broader perspective of attributes that manifest or surpass cultural differences and to promote appreciation of universal characteristics of successful music teaching.

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Roundtables

History and Global Impact of the ISME Research Commission: 50 Years Advancing Music Education Research

Patricia A. González-Moreno (Convenor)
Universidad Autónoma de Chihuahua, Mexico

As stated in its vision and mission, “The Research Commission holds as a central value that the theory and practice of music education be underpinned by a strong research evidential base” by examining important issues facing music education worldwide and providing a forum that enhances communication, critical analysis, and dissemination of research innovations in our field. This symposium aims to present a profound and critical revision on the global impact of the Research Commission (RC) Seminars, since its inception in 1966 until now. The first presentation provides a historical investigation of the creation and development of the first international seminar on experimental research in music education in 1968, as the seeds of the RC. The second presentation addresses the global reach of the RC along its 50-year history, through an empirical examination of the contributions and the number of scholarly citations which demonstrate its overall impact beyond its seminars. The last presentation aims to provide evidence of the formative and inclusive role of the RC, by examining the manuscripts in the last decade, taking into consideration the presenters’ academic background, geographical representation, and the nature of their research contributions and innovations. In summary, the symposium will present empirical evidence that suggest the scope, achievements, and challenges of the RC in fulfilling its mission around the world.

From Interlochen 1966 to Reading 1968: The Birth of the ISME Research Commission

Ana Lucía Frega
Fundación UADE, Argentina

If not recorded, personal history, a primary source for research can be forever lost. This historical investigation aims to document and preserve initial personal communication with Dr. Arnold Bentley (Reading 1964; Interlochen 1966; Reading 1968) that led to the founding of the ISME Research Commission (RC). Subsequent

meetings with Drs. James C. Carlsen (Interlochen 1966) and Dr. Bengt Franzen (Interlochen 1966), revealed the increased importance of research for the healthy development of music education locally and internationally. Thus, began a strong understanding, influential global movement, and catalyst for diversity and inclusiveness in music education research. During an ISME Plenary session, Bengt Franzen presented a paper entitled, “The place of research in music education”, where he established vital points to improve music education at the time, and discussed the future through (a) thematic orientations of applied research for the daily classroom practices of music teachers working in diverse levels on different music subjects, and (b) pertinent questions, “which perhaps are ardent for the Swedish music teachers but also for colleagues in other countries” (Franzen, 1966)¹.

Consequently, Bentley, Carlsen & Franzen proposed the first international seminar on experimental research in music education, held in Reading, England (1968). Designed with a strong and impactful discussion structure, this quickly developed into the ISME RC. Both research methods and findings became a focus of discussions during these bi-annual seminars. Papers were disseminated through publication, and exchanges at the commission gatherings created a continuous training possibility for new generations. The regularity of the meetings, number of applicants, serious selection of papers, and time given to rigorous discussion and suggestions provided the international domain of music education research an array of new knowledge and global equity of research understanding that continues to this day with the 28th ISME Research Commission recently held in Jyväskylä, Finland.

The Global Reach and Impact of the International Society for Music Education (ISME) Research Commission

Evelyn Orman

University of North Carolina at Charlotte, USA

The International Society for Music Education (ISME) Research Commission (RC), the first ISME commission established in 1968 has held a seminar prior to every ISME World Conference for the last 50 years along with one additional seminar in 1975. One founding principle of the RC is to bring together as broad a geographic representation of music education research scholars as possible to present and discuss their research¹. This investigation examined the current state of that global reach and impact at the 50-

year milestone. Using the descriptive method² of inquiry³, countries represented by first authors and the number of times countries are mentioned in the titles of all manuscripts presented from the first through 27th seminars were identified. Countries include those recognized in 1968 when the RC was established and those in or officially banned from the 1968 Olympic Games as the Olympics represent the largest and broadest global event in the history of the world⁴. To evaluate impact beyond the seminars, the number of scholarly citations^{5,6,7} each manuscript has received was determined using Google Scholar. Aggregate results show first authors are from 29% of all recognized countries in 1968 and 38% of countries from the 1968 Olympic games. The 637 published manuscripts are cited 8,397 times in the scholarly literature, an average of 7.59 citations per manuscript and specific countries are named 158 times in the manuscript titles. Thus, data revealed RC first authors represent one-third of the world's countries over the 27 meetings and based on citations, scholars know and value the contributions of the RC to our research literature. An empirical examination is vital to understanding whether we are accomplishing our goals and should always inform future decisions. This data demonstrates the broad, diverse, inclusive global impact of the ISME RC, an indispensable part of the ISME organization.

The Formative and Inclusive Role of the ISME Research Commission in Building Research Capacity Worldwide

Patricia A. González-Moreno

Universidad Autónoma de Chihuahua, Mexico

Throughout 50 years of history, the Research Commission (RC) -the first commission ever created under the umbrella of the International Society for Music Education- has had the mission to build research capacity around the world, by providing a learning environment for early and experienced researchers interested in developing a wide range of research approaches in order to examine diverse issues in music education. Through a content analysis of the seminar proceedings in the last decade (2008-2018), this investigation examined the formative and inclusive role of the RC, by examining presenters' academic background (early or experienced researchers, advisor-advisee collaborations; peer collaboration), geographical representation, and the nature of their research contributions (methodologies, innovative procedures). Data analysis included both descriptive statistics and qualitative thematic analysis, from a total of 147

manuscripts presented. Findings suggest that despite a predominant representation of English-speaking countries (USA, UK, Canada, Australia; n = 112, 76%) with a large number of experienced researchers, the majority of early researchers in the last decade (61.7% of 47) came from other regions where music education is still under developed. While further research on the impact of early researchers-experienced researchers interaction in developing music education inquiry in their particular regions is still required, the RC seminars have provided a multicultural learning environment where a wide range of methodological approaches are examined and discussed. The diversity of qualitative, quantitative, and mixed methods techniques and innovations that will be reported suggest the continuous interest on advancing not only our evidence-based knowledge, but also, the development of frameworks to assess the veracity of our work by exploring the range of perspectives on what constitutes high-quality and relevant evidence. Implications from the study point at the continuous challenge and opportunities of the RC in building research capacity in regions such as Africa, Latin America, and Asia.

The Role of Silence in the Formation of an Authorial Voice in Performance Practice

Pamela Burnard¹, Nick Sorensen², Tal-Chen Rabinowitch³, Satinder Gill¹

¹University of Cambridge, UK

²Bath Spa University, UK

³University of Haifa, Israel

While silence has been a topic treated as a quite uniform entity in musicological studies on music, in this paper we propose that there is a complex relationship between sound and silence which gives rise to different kinds of questions about its contribution within diverse performance practices. In this paper we argue that silence plays a role in the listener's perception of the player's creative and authorial voice, and offer an analysis of its role within the context of jazz and classical performance practices. Our central aims are to identify (i) how silence is performed and (ii) what is the nature/role of silence as manifest in contrasting performance practices and (iii) whether silence affects the listener's perception of the player's authorial voice and (iv) whether the pattern of silence in a musical excerpt determines listeners' perception of the expressivity? (that is, a potential contributing parameter of performance creativity).

Methodologically, we draw on: (i) findings from an interdisciplinary review of literatures (including the study of music as performance practice, musicology, cultural studies, music psychology, creativities and improvisation research) to characterise and address key parameters of silence; (ii) findings from analysis of live and recorded performances of jazz and contemporary classical genres featuring Miles Davis performance of 'Round Midnight' and Glenn Gould's performance of Bach's Aria from the Goldberg Variation (where the embodiment of the performer's authorial voice, which constitutes performance creativity, is forged in/through the use of silence in their performance practices). We develop a new analytical framework which identifies some empirically found parameters of manifestations, potentialities, communication and materiality. Our findings articulate a novel and complex interplay between sound and silence which is critical to the perceptual salience and generativity of performance creativity. Some implications for the education of the professional musician, some methodological questions, and some suggestions for further research, will be discussed.

Exploring Posthuman Methodologies in Musical and Transdisciplinary Practices

Ursula Crickmay¹, Hermione Ruck Kneene²

¹University of Exeter, UK

²Oxford Brookes University, UK

There is a growing interest in posthuman research methodologies within educational research (Taylor & Gannon, 2018). Described sometimes as new materialist, post-qualitative (Lather & St Pierre, 2013), or more broadly as part of the 'ontological turn' (Bodén, Lenz Taguchi, Moberg, & Taylor, 2019), these are approaches which explore equity and diversity by decentring the human, and attending to the vitality of matter, both human and nonhuman (Bennett, 2010).

Within our research in music and interdisciplinary education, this has led us to question how we work with data in creative, responsive and more equal ways. As a beginning doctoral researcher and a supervisor with a background in more conventional qualitative, ethnographic methods, these approaches have challenged us personally and methodologically, driving us to consider questions such as, how we can let the data have agency in research? How can we collaborate with all of the

participants in our research, including the human and the nonhuman? Where a thematic analysis might seek patterns and similarities within a process of data reduction, how can we use a diffractive analysis to focus instead on singularities and difference (Mazzei, 2014)?

In this presentation we will discuss our approach to these questions at different stages in our respective research experiences as PhD candidate (Ursula) and supervisor (Hermione). This will include presenting the findings of a pilot doctoral study, developing methodology for an investigation of co-becomings in participatory music workshop practices. The pilot study provided a space to try out how this ‘methodological sensibility’ (Bodén et al., 2019, p. 3) might engage with themes of co-creativity, inclusivity and diversity within this musical practice. We will describe how we used this space to generate and work with data, as we also attempted to acknowledge our own embodied position in the sonic, material assemblage of a music workshop. Next we will discuss a collaborative experience of diffractive analysis in a study of transdisciplinary science | arts creative pedagogy (Chappell et al., 2018) in which Hermione was involved as a research associate. Finally, we will share our own ongoing experience of approaching PhD research as student and supervisor in a more equal way, as we explore emergent methodologies in what Koro-Ljungberg (2016) describes as ‘fluid methodological spaces’ (p. 79).

Student-Centred Learning and the Study of Popular Music History in an Undergraduate Curriculum

Sonja Cruywagen
University of Pretoria, South Africa

A music history curriculum should include the major concepts and skills music students need to understand and be able to apply in their professional careers. Student-centred learning activities are important for promoting the development of higher-order skills such as critical thinking and independent learning. To obtain these skills students should construct and act on their own understanding of reality as a problem that requires a solution. People learn through questioning, analysing and problem solving and from this perspective the constructivist classroom is the ideal ‘natural’ learning environment.

Implementing a “pedagogy in practice”, with lifelong learning as the end goal will always be a challenge. The real-life connections students make with popular music seem far removed from studying its history. This qualitative reflective investigation sought to re-structure a seven-week popular music history undergraduate curriculum through the author’s experience as an active participant in music teaching and learning underpinned by a conceptual framework drawn from literature. The research questions guiding the investigation were: Which skills should be focused on to develop critical thinking, independent and collaborative learning? What should the students be able to do at the end of this module?

Focusing on constructivist principles of learning enabled the researcher to shift the learning environment focus from teacher-centred, to student-centred learning. Teaching and learning in South Africa is in a process of transformation. Issues such as decolonisation and subject content need to reflect where South Africa fits into the worldwide design of curriculum studies. Therefore, the proposed learning experiences that are embedded in this student-centred pedagogical approach should encourage students to work independently and collaboratively to identify key music competencies, values and beliefs in order to prosper as musicians in twenty-first-century South African society.

Mixed and Multi-Methods: A Creative Approach to Methodology in Cross-Disciplinary Music Education Research

Eloise Doherty¹, Wayne J. Wilson¹, Margaret S. Barrett^{1,2}

¹The University of Queensland, Australia

²Monash University, Australia

Researchers in music education and music therapy often work with unique participants, small sample sizes, and limited resources. Many methods, methodologies and theoretical paradigms are appropriate in such settings, and researchers select and justify these based on the project at hand. This is common in humanities and social sciences but is often poorly understood by researchers from positivist traditions. This poses a challenge for those engaging in cross-disciplinary work, especially when their output needs to be accessible to varied audiences.

This paper discusses a recent mixed-method doctoral project which sought to address the benefits and challenges of music education in children with hearing loss. It

had dual aims: Firstly, it sought to understand how children with hearing loss progressed in flute lessons compared to their normally hearing peers. Secondly, it aimed to map the effect these flute lessons had on the children's auditory processing. Data consisted of interviews, journals, practise charts, and hearing and auditory processing assessments. This was collected at set intervals while eight children, four with hearing loss and four without, participated in nine months of group flute lessons.

This project posed many challenges. Firstly, limited resources meant that one doctoral student taught flute lessons, conducted all data collection, and analysed the results. The methodological and ethical issues associated with this level of involvement are not explicitly addressed in the literature and therefore required reflexivity and creativity to manage. Secondly, the project's dual aims meant that the music education component was unfamiliar to audiologists, while the audiology component was unfamiliar to music educators. The final thesis required careful planning to make it accessible to a diverse audience, including examiners, industry professionals and parents.

These challenges were addressed by drawing on methodologies from numerous paradigms. Single subject analyses initially designed for psychology were conducted alongside traditional group statistics. This was combined with ethnographic, autoethnographic and narrative inquiry techniques to produce eight interlocking case studies. Overall cohesion, reflexivity, audience engagement and orientation within the theoretical framework were then achieved using poetry, imagery, and an overarching metaphoric narrative.

This paper discusses the literature, reasoning and processes that lead to this alternative thesis format. Advantages, disadvantages and potential applications are addressed. Overall, this work suggests that cross-disciplinary research of this nature can be conducted ethically and produce meaningful results. This is especially relevant in music education and music therapy research which is often limited by the circumstances in which it occurs.

Going Beyond the Thematic: Using Grounded Theory Techniques to Capture Unheard Voices

Margaret Flood
Florida Southern College, USA

The music education profession has actively encouraged pedagogical practices that are all-inclusive and socially just. Music education researchers are also moving toward more socially just practices in methodology, particularly in qualitative research, where the participants' words and actions are actively involved and are the main source of data. As researchers begin to document the experiences of marginalized populations, this becomes ever more essential. The researcher's critical analysis of participants words, observations, and collected documents, as well as their own sensitivities and biases, greatly influence the findings. As a researcher, one must try to remain as objective as possible, and one way of doing so is through the approach to data analysis. This workshop is geared toward beginning qualitative researchers interested in more rigorous data analysis techniques that help capture participant experiences through their respective voices, feelings, and emotions.

The aim of this workshop is to show how grounded theory analysis techniques can help researchers to stay closest to the words and actions of the participants, resulting in a more objective analysis of data. A brief overview of the analysis technique will be introduced with examples. It will include activities that allow the audience to break into small groups and practice the first two rounds of coding an interview transcript of a woman band director as well as observer comments. The first round will incorporate line-by-line coding of the interview, using *in vivo* codes and gerunds to show how this technique captures participant experiences and the emotional content within them. The second round will group codes into families that lead into the emerging themes, which help to form a clear, organized outline of the findings within the study. Next, workshop participants will code observer comments and form connections between these codes and the interview transcript codes. Lastly, participants will also critically exam the themes for moments of intersectionality and briefly brainstorm how the themes can be connected to music education theory and philosophy.

Music education has a rich history of quantitative and descriptive research methodology. The recent surge in qualitative methodologies, such as narratives, ethnography, and phenomenology, have warranted a more critical approach to data

analysis. Using grounded theory techniques challenges the objective versus subjective critique qualitative research often receives from academia and provides a way to produce more concrete findings when documenting the human experience.

Developing Creational Purposeful Capability at Skill (CPICS): Intrinsic and Broader Implications

Martin Gardiner
Brown University, USA

Our continuing research concerning interactions between singing skill and broader academic skill learning (Gardiner et al, 1996; Gardiner, 2000, 2003, 2008a,b, 2015, 2019a,b,c) has led me to propose that these interactions concern what I term Creational Purposeful Capability at Skill (CPICS) (Gardiner, 2019b,c). CPICS refers to capability which at each stage of its development prepares for “creational” mental engagement producing skillful behavior applied with “creational” strategy: i.e. adjusted in real time to requirements that cannot be fully known in advance. Two persons conversing often illustrate “creational” adjustment when each must react to what the other says in real time without fully knowing in advance what the other may say. As I will discuss, the students we study who begin “Kodaly” method singing training as part of their curriculum as soon as they begin Elementary schooling must develop many types of creational strategy to achieve the beauty at singing together that so impresses their parents, teachers and, perhaps most importantly, the students themselves. This singing training prepares a rich foundation for further advance at musical skill. Our research also shows these musical gains to be associated with significant gains at cognitive mathematical and verbal language skills and also at classroom behaviors. The musical and broader impacts are especially strong in those who profit most from them: those who are weak beginning formal schooling or who come from economically challenged homes. As I will discuss, CPICS theory can help to explain both the intrinsic and broader impact of music skill learning we are documenting.

Cataloguing Current Research Methods on Music Education: Debating Epistemological, Ontological, and Ethical Issues

Marcelo Giglio^{1,2} (posth.), Ruth Brittin³

¹HEP-BEJUNE, Switzerland

²University of Neuchâtel, Switzerland

³Pacific University, USA

The vision of the ISME Research Commission considers as central value that the theory and practice of music education can be supported and reinforced by a rigorous research evidential base. One of the crucial issues is to develop, refine and demonstrate a range of research approaches, methods and techniques for scientifically debate to improve music education and learning. Several handbooks of music education or research in music education (Colwell & Richardson, 2002; McPherson & Welch, 2012; McMillian & Schumacher, 2014) have provided overall reviews on research results, innovations in music education, and research methods used in our field. But current educational evolution needs a space for critical analysis, sharing experiences on epistemological, ontological, and ethical issues that can impact on current and future research and teacher practices in music education.

This collaborative production (cataloguing and debating) can offer an opportunity for using the knowledge already gained. Practitioners, researchers, and practitioner researchers have important roles in creating and supporting a space conducive to innovative practices in music teaching and learning.

Purposes: With three different levels, the purpose of this creative workshop is to focus on (I) research practices, (II) current research methods where research and practice meet, and (III) epistemological, ontological, and ethical forms of thinking influencing research methodologies in music education.

Activities: We will invite participants to discuss their practices, experiences or research with other participants. First, we will promote a discussion on different research positions. Second, we will discuss current and new approaches. Third, we will explore if there have been changes in teaching based on empirical evidence. Each group shall debate and write a text about their catalogue and debate. Through the discussion, we aim to gain international insight into important teacher and researcher practices or innovations. In this sense, we will promote participants' dialogue to rethink the epistemological, ontological, and ethical forms of thinking and acting to

develop research in music education. Participants will receive an electronic copy of the results of this workshop.

Applications for music education: This workshop is linked at the mission of the ISME Research Commission. The goal of this workshop is to explore approaches and experiences within current research practices in music education and to provide a collective insight into important epistemological, ontological, and ethical issues underlying research methodologies and teaching practices in music education.

Culturally Sustaining Practices Among Music Educators: Commonalities Across Varied Contexts in the United States

Ruth Gurgel

Kansas State University, USA

Ideally, student demographics in a school's music classroom reflect the demographics of the school itself, mirroring proportionate ethnic and economic diversity. Unfortunately, most music classrooms in the United States do not reflect the demographics of the school proportionately (Elpus & Abril, 2011; Lundquist, 2002), signaling inequitable and often hidden pedagogies and underlying ideologies (Gurgel, 2016). In this study, the researcher located six music teachers who maintain proportionate demographics in their classrooms. This study examined these teachers' ideologies and practices and compared them with the theory of Culturally Sustaining Pedagogy (CSP), as defined by Gloria Ladson-Billings (1994). The music teachers who formed this collective case study teach in Los Angeles, California; Las Vegas, Nevada; Indianapolis, Indiana; Los Alamitos, California; The Bronx, New York; and Cleveland, Ohio. To gather data, the researcher completed field observations with each teacher, documenting at least two full days of music instruction and conducting multiple semi-structured individual interviews. With a team of undergraduate researchers, the researcher analyzed data using open coding, axial coding, memoing, and diagramming. As commonalities among the six music educators emerged, the researcher compared their common practices and ideologies with the prongs of Culturally Sustaining Pedagogy, discovering a strong overlap. The music educators in the study had different teaching styles, experiences, musical upbringings and ensembles, yet all maintained strong levels of musical excellence (as defined by their students and communities), cultural competence, and sociopolitical consciousness

(Ladson-Billings, 1994). Educators' ideologies in the areas of conceptions of self and others, relationships and knowledge also aligned. The researcher will share narrative examples highlighting how the music educators incorporated Culturally Sustaining Pedagogy into their varied musical contexts. The researcher will also share qualities of the music educators in the study that transcend their contexts and provide possibilities for translation into new contexts and communities. Implications include effective ways to integrate principles of Culturally Sustaining Pedagogy and a hopeful trajectory that includes work to correct disproportionate membership of minoritized students in music classrooms.

Theories of Creativity Applied to Musical Creativity: Student's Views

Erkki Huovinen

Royal College of Music in Stockholm, Sweden

Much of the research on musical creativity assumes some broader theoretical notion of creativity – for instance, conceptualizing creativity as an experiential process, or as a cultural field in which ideas or products gradually earn their “creative” status. Explicit judgments concerning the relative applicability of distinct creativity theories in the field of music have mostly been made by researchers in the purpose of arguing for a particular theoretical position. Moreover, the musical phenomenon to be accounted for has often been taken for granted: musical composition, in particular, has frequently eclipsed other forms of musical activity in these discussions. In turn, research into musicians', music students' or teachers' views on creativity has tended to focus on implicit theories. In a review of research concerning teachers' implicit theories of creativity, Mullet and colleagues (2016) noted that although teachers value creativity, their views typically remain vague and detached from theories and research on creativity.

The aim of the present mixed-methods study was to allow music students to engage with a range of general theories of creativity and let them evaluate the applicability of these theories in a musical context. Research questions included which theories would be judged as most appropriate for music, whether judgments regarding a given theory would vary across different kinds of musical target activities,

how the students would argue for their views, and how their individual backgrounds might affect their judgments.

47 Finnish students of music education and musicology participated in the study. After studying a standard handbook chapter summarizing ten central theories of creativity, they received written summaries of these theories, and were asked to rate the suitability of each theory in accounting for musical improvisation, musical composition, performance of composed music, and music-related ideation. Subsequently, the students wrote essays in which they justified their choices of best theories for each type of activity.

The overall “winner” theory to account for musical creativity was Amabile’s (1999) componential model. However, the results also showed significant differences between the judged appropriateness of theories across the four types of musical activity. For instance, the classical four-stage model was the most favored theory for composition, but next to last regarding improvisation. In the conference, these and other quantitative results will be explained through a qualitative analysis of the essay responses. The results show that students understood musical creativity as a multi-dimensional phenomenon – not always in line with the leading theorists in the field.

Developing Digital Literacy Skills Through Online Music Orientations

Carol Johnson

University of Melbourne, Australia

The adoption of a faculty or department orientations for students can be a supportive tool for those students new to university learning, as well as students returning to university studies. Focused orientations can decrease attrition as well as help students better navigate the institution and its offerings for enrolled students. Further, orientations that help student develop technological skills have been found to support stronger overall student learning outcomes as they can focus on course work rather than learning technologies required during the semester.

Further, online orientations can support student retention, self-regulation skills and basic digital literacy and technology skills when used in general academic disciplines. Previous research identified that short-term online orientations (e.g., 10 and seven days in length), with focused daily content, can provide effective low-

stakes opportunities for students to learn how to use, navigate, and/or create using technologies familiar to a particular university faculty or unit. However, the effectiveness of online orientations is often related to its design. That is, the orientation should appeal to, and address a particular faculty's discipline, and be specific to the needs of its student body.

To date, online orientation for music students at the conservatoire level has yet to be fully explored. Therefore, this study investigated: 1) What are essential skills and attributes for music students in the online learning environment?; and 2) What activities and resources help support students form self-regulation skills for learning through digitally-enabled means (e.g., online learning, apps, etc.)?

Using a Design-Based Research (DBR) approach, this study investigated the design of a seven-day online orientation for conservatoire students. Daily, 15-minute modules, focused on student life, health and well-being, technology tools, academic integrity and digital literacy skills through low-stakes activities. Using three iterative design cycles, survey and interview data collected across three cohorts of voluntary and consent-informed participants informed the final orientation design.

Findings suggest that the integral design aspects of the orientation should include relevant content (i.e., faculty and discipline-based content), student voice, and use of established instructional design principles. Further implications and recommendations will be discussed.

The Place of Traditional Music in Public Schools of Côte d'Ivoire: Challenges and Prospects

Bassirima Kone¹, Rose Omolo-Ongati²

¹Felix-Houphouët-Boigny University, Côte d'Ivoire

²Maseno University, Kenya

Like many African countries, Côte d'Ivoire has inherited a colonial past which keeps on weighing heavily on many aspects including education, more than half a century after independence. The public school education systems and the content of the curricula remain strongly influenced by France and Canada, thus constituting real obstacles to the Africanization of the scholastic institution. However, the 1977 law reforming school education recommended "*to rely on tradition and knowledge of the environment...in order to allow learners to access national culture*". How is this possible if

music from the Ivorian terroir is absent from the national education system? How can music education contribute to building the country's cultural identity and personality if traditional music and musical instruments are not included in school curricula? Is not the discipline of music education itself, which is very little valued by the Ivorian education system, the major pitfall?

The objective of this study is to contribute to the promotion of traditional music and musical instruments for their integration into the music education programs at the public school level. This necessarily involves enriching the curricula and the hourly quota of the music discipline in the education system in addition to the efforts made in recent years. Therefore, this study in a quantitative approach assesses the difficulties and presents the challenges faced by learners and teachers of the discipline. To this end, a survey was conducted among 102 individuals in three different structures that teach music education. The results collected provide a non-exhaustive diagnosis of the state of the discipline of music education in public establishments in Côte d'Ivoire. Proposals are made including strategies for popularizing local music and learning traditional musical instruments in public schools with a view to contributing, from primary school onwards, to the promotion of national culture for the construction of a strong nation.

Music Education in International Progressive Education Movements: A Research through Pedagogical Press (1920-1949)

Tamyra Moreira
University of São Carlos, Brazil

This work presents some results of my PhD research developed between 2015 and 2019, whose general subject was the music education among some pedagogical movements in early 20th century. The investigation focused on movements that proposed pedagogical innovations and discussed subjects such as the role of the school in society and ways to organize school materials and activities in order to build an environment adequate for the increasing of children participation. Some of the most preeminent pedagogues and authors engaged in these groups are known as references in educational area nowadays and worked in different countries, such as Maria Montessori in Italy, John Dewey in USA, Célestin Freinet in France, etc., whose relevance is connected to the present.

The main goal of the investigation was to search for signs of innovation in music education area. In order to observe how pedagogical ideas in music education were discussed and if they expressed the movements' ideas coherently, three pedagogical journals were selected as central sources. A choice for journals from USA, France and Brazil in 1920's, 1930's and 1940's was important to observe how these international movements were connected in the inter-war period. These materials attest that education became a global subject in these decades and that the school population had a strong rise in these countries. Other journals and books from the same period were also consulted in order to make the context understanding wide.

The music education contents in these journals – Progressive Education (USA), *La Nouvelle Éducation* (France) and *Revista Brasileira de Estudos Pedagógicos* (Brazil) – were analyzed in order to provide a portrait of the area in this context. The categories that guided the investigation of the sources were (i) authors, (ii) subject-themes, (iii) people and institutions named and (iv) suggestions on literature and discography. Some of the results to be presented here include (a) the centrality of Satis Coleman as an international reference in music education among the progressive pedagogical movements; (b) the rising and international spreading of handmade flute groups; (c) the discussions on the creative activities such as composition and improvisation, as well on repertoire and the new technologies for sound record and diffusion.

Study on Musical Practices in Non-Institutionalized Spaces in Canada and Brazil

Marco Antonio Toledo Nascimento¹, Francis Dubé², Adeline Stervinou¹, Ana Cristina Tourinho³, Zelia Chueke⁴, Davi Brouguel², Mikaël Francoeur², Méi-Ra St-Laurent²,
Marcilane Cruz¹, C. Gonçalves¹

¹Federal University of Ceará at Sobral, Brazil

²Laval University, Canada

³Federal University of Bahia, Brazil

⁴Federal University of Paraná, Brazil

Studies carried out in several communities located all over the world proved music to be an efficient tool in promoting psychological well-being to those who perform it (Gouk, 2001; Koen et al., 2009). Music is perceived as having a positive role in what pertains to emotions, communication, and social identity of its players (MacDonald,

Kreutz and Mitchell, 2012). In Brazil, making music fosters possible professional aspirations, allows to express and value young people's cultural identities (Ilari, 2013), and creates a feeling of belonging to a group, which often plays a role of family support. Music also plays a role in distancing young people from socially endangering conditions, such as violence, criminality, or drug use (Kleber et Souza, 2013). That said, few studies documented this phenomenon from an intercultural perspective. The studies available in this domain are based on cases related to specific social contexts, disregarding any comparison between the cultural communities under study (Saarikallio, 2012). To overcome this lack, a team of Canadian and Brazilian researchers realized a project of research for two years with youth and young adults from two different cultural and social backgrounds: a group of musickers from a community center in the Brazilian city of Fortaleza (CUCA) located in vulnerable area, and a rock music school in the city of Quebec, Canada (Amplisson). The study aimed to understand better the role and the educational approaches used within these two making-music community structures, as well as to describe the impacts of music-making activities in the life of these teenagers and young adults both from Canada and Brazil. The data gathering was based on an interdisciplinary research protocol that considered the musical activities performed, as well as interviews with the young musicians, managers, and teachers from both sites. The project used the Bonde's (2011) "health music(k)ing" theoretical framework, thus allowing for understanding and discussing the many impacts of musical activities on the lives and well-being of young people stemming from psychologically vulnerable communities. Our study presents the results obtained in two years of investigation. We concluded that making musical activities contribute substantially to their well-being (e.g., feel safer, manage and connect with their emotions), personal development (e.g., awareness of their potential, personal skills, improvement), and interpersonal relationships (e.g., socializing, musical life). We also concluded that these contributions to their lives are possible if their musical activities are practiced from their respective music cultural reality.

Diversity and Learning through Listening: How Can Education Help Community Orchestra Audiences?

Claire Nicholls

Education Queensland, Australia

Quantitatively the socio-economic demographics, preferences and cultural tastes of audiences in the contemporary concert hall are relatively well understood. However, far less is known about the diversity of listeners particularly in relation to their experiences of orchestral concerts and the impact of educational efforts. The present study examined the learning and listening experiences of audience members at diverse concerts with professional symphony, metropolitan and regional community orchestras in Australia and the importance of differentiation in relation to learning experiences through listening.

Qualitative data generated both with arts organisers of the orchestras and audience members through semi-structured interviews and focus groups were combined with observational data of a diverse selection of concerts from a season of performances by each orchestra. The data were analysed using a hermeneutic phenomenological method adapted from the work of Hans Georg Gadamer and Max van Manen, and theory synthesised draws on John Dewey's ideas on art and education as experience, and Christopher Small's notion of musicking. The study makes important contributions to orchestra audience development, lifelong music education and experiential learning through listening. The findings theorise four essential qualities that are inherent to the practice of pedagogies of listening that acknowledge the diversity of audiences- the notion of relationality, the balance between various tensions, differentiation within both pedagogy and the act of listening itself, and the technologies utilised in pedagogies of listening. Key findings from the three diverse concert halls are used to highlight the ways pedagogy is developed and how context and listener-audience-orchestra-musician relationships impact learning experiences through listening.

Does Motivation to Learn a Musical Instrument Vary Between Children and Adolescents? A Literature Review

Antonio Oliveira¹, Fabiana Ribeiro¹, Luísa Mota Ribeiro¹, Patrícia Oliveira-Silva¹, Gary E. McPherson²

¹Universidade Católica Portuguesa, FEP, CEDH/HNL, Portugal

²Melbourne Conservatorium of Music, Australia

Although a number of literature reviews have dealt with motivation to learn in academic contexts, few have focused on learning a musical instrument. In this presentation, we systematically review peerreviewed English language articles published in the last three decades. Twenty-one articles were included since met the inclusion criteria. These were analyzed according to the age range of the samples: exclusively children or adolescents, and articles with both children and adolescent samples. Our analyses shows that 1) parental support plays an important role in enhancing the motivation of young musical instrument learners, 2) motivation tends to decrease as learners develop expertise because of the task difficulty and the effort required to sustain ongoing practice, 3) children with intrinsic motivation tend to develop a strong and precocious musical identity, 4) perceptions of children concerning how long they believe they will be playing their instrument before commencing their musical studies impacts on their subsequent commitment to playing and their achievement, 5) when considering performance examinations, those with higher scores reveal higher levels of motivation and accumulated practicing time, 6) the majority of studies showed that children express higher levels of motivation when they feel socially supported by the group and when they perceive their opinions are considered. These results have several implications in music education. For instance, teachers can be advised to respond sympathetically to children's opinions and expectations, strive to give positive feedback that will foster student's perception of competence, and help students develop their self-regulation in order to improve the quality of their practice. On the other hand, parents can involve themselves in the learning process, work cooperatively with the instrument teacher or band leader by sitting in instrumental lessons, and by providing physical and emotional support for home practice.

Qualitative Research in Music Education: Experiences in Various Contexts in Brazil

Jusamara Souza (Convenor)

Universidade Federal do Rio Grande do Sul, Brazil

Under the umbrella of qualitative research, various methods have been established in recent years in the field of music education. In Brazil, different theoretical perspectives on music-pedagogical phenomena were developed and the search for corresponding methods provoking a strong differentiation in this field. However, rarely are these distinct approaches related to each other as the perspective of biographical research, oral testimony, or case study.

We intend at this symposium to discuss papers that take into account theoretical aspects and empirical work about this theme. The participants in the symposium will present different research experiences in diverse social settings in Brazil. Following to these experiences, participants will reflect on the following questions:

- How do these works contribute to debates about the relevance of ethical aspects to qualitative research?
- What are the strengths and weaknesses of each methodological approach?
- To what extent are they compatible or in tensions with one another?
- How can individual experiences contribute to a political agenda and public discussions about the role of qualitative research in different sociocultural contexts around the world?

From the perspective of qualitative inquiry, it is essential to combine different data, methods and theoretical perspectives such as image analysis, analysis of group discussions and analysis of documents. We invite colleagues from different Brazilian universities with experience in combining various interpretative approaches to discuss these combinations in the context of specific empirical projects and to narrate creative ways of adopting research instruments.

The structure for the session will include a brief introduction of the objectives (5 minutes), followed by individual presentations of research experiences in different contexts (55 minutes). After the presentations, the participants will jointly reflect and debate on different issues in relation to the topic (10 minutes), to finally open the space to the audience to interact with the panel (20 minutes).

The Multiple Dimensions of Fieldwork in an Orchestra from the Oral Testimonials of the Families Involved

Adriana Bozzetto

Universidade Federal do Pampa, UNIPAMPA, Brazil

This paper shares the doctoral research process, within the qualitative approach. The thesis opens a discussion about the educational project of families with children and young people who learn music in an orchestra in southern Brazil, with emphasis on the training of professional musicians. The study was based on testimonials from low-income students and their families. The research analyzed how the family space - the first socialization of every individual - operates so that children and young people remain in the group developing their musical formation. The fieldwork stages comprised remarks from rehearsals and performances of the first class that joined the orchestra, as well as interviews with students and their families. In this communication, the focus is on showing the experience of building the researcher craft in the field, in different stages of the research. Also, discuss points that guided the development of the construction of the sociological framework of the families under study, based on oral testimonials in the field of Oral History, following the guidance of Queiroz (2008), Lang, Campos and Demartini (2010). Unveiling the multiple dimensions of an interview, the processes of doing and thinking the research are inseparable. We value the path in which these lines were produced, the fears, the charms, the doubt. The construction of a sociological framework, which aimed to show student's family configurations and models - presenting the context in which they live, schooling, musical taste, family pedagogical practices and future projects - opened for new discussions in continuous movement between the theoretical and the empirical.

Case Study as a Methodological Option for Research on Choral Conductors' Training and Professional Practice in Enterprises

Lúcia Teixeira

UNIPAMPA, Brazil

This paper discusses some of the challenges of choosing case study as a methodological design for an investigation accomplished with two choir conductors on their training

and professional practice in choir singing activities within the context of two enterprises. As data collection tools, interviews were held with the conductors as well as observations of choir rehearsals in both enterprises. Considering enterprises as spaces where researchers's presence is not common, ethical aspects are problematized in the light of some reference authors of the qualitative research approach. Challenges were posed to the researcher from the moment of her arrival and circulation in the field. Since the rehearsals observed took place in the company space, research data exposed the dichotomy between the work environment of singers - company employees - *versus* choral singing, understood by employers as a leisure activity. Thus, the presence of singers at the choirs' rehearsals during the data collection period was always conditioned to the demands of the work. In this regard, studies on leisure were fundamental for understanding the empirical field. Research results indicate the need for the conductors to take the environments in which they operate and the challenges imposed by them as learning, not restricting their professional training to the academic scope only. In this way, being aware and being flexible to the demands of different contexts of action are part of upbringing a professional conductor. Results revealed the importance for choir conductors to know how to articulate the skills acquired in the academic-professional formation with the necessary capability to perform in specific contexts.

The Music Teacher and the Autobiographical Research: Challenges and Learning

Maria Cecília Torres

Centro Universitário Metodista IPA, Brazil

I present some reflections about (self)biographical writing in the life of music educators, in order to highlight this constant exercise of telling our stories through the narratives or writings of oneself. There are some scenes and questions regarding the challenges and how teachers and music teachers learn about the biographical field of research and choose to develop their investigations based on narratives or writings from my own experiences as a music teacher and researcher. The text is organized into four parts that encompass the researcher's craft with its narratives: *Memories in time*; *Biographical research and self writings*, *Self writing and challenges analysis* and *Learning and research pathways*. I remember the time when my interest in the field of biographical research

began, coincidentally the year (2001) I cursed a post graduation period for my PhD in University of Queensland, Brisbane, Australia. In these fifteen years since that, the first steps in the biographical field - with a search by authors of the (auto)biographical research area as Ferrarotti (1998), Novoa and Finger (2010), Passeggi (2008), Josso (2010), Larrosa (1996), Abrahão (2004), among others from music education field as (Louro, 2016), Maffioletti (2016) and Abreu (2016), helped much in the doubts about the research referrals and the possibilities and weaknesses of this methodological choice to carry out research. During more than fifteen years after that, I also participated in events such as CIPA (since 2004) and as member of examination commission in Master and PhD degree with this approach and, in this way, using a research method for travelers who live with riddles and revelations (Pais, 2003), inspired by reading and discussing the book "Vida cotidiana - enigmas e revelações" in our research group *Educação Musical e Cotidiano*", I started and kept researching in this "(self)biographical space".

Mapping Music Education Research in Mainland China (2006 - 2017): A Metadata-Based Systematic Literature Review

Yang Yang¹, Aiqing Yin², Graham Welch³

¹The Education University of Hong Kong, China

²The Northeast Normal University, China

³The UCL-Institute of Education, UK

In Chinese literature, studies on music education started booming in the early 1980s and have been increasingly influenced by educational movements worldwide. However, research about China's music education seems to be underrepresented amongst a vast body of educational studies in English academic literature. Using 'music education' and 'China/Chinese' as title keywords, the UQ online library database (covering JSTOR, SAGE, ERIC, and ProQuest) returned only 184 matching results by June 10th, 2019. On the other hand, 23,000 journal articles were found in the national database for Chinese academic publications (CNKI), including 26 literature reviews. Given that most of these reviews have not specified the method for reviewing, it is difficult to piece together a comprehensive picture of music education studies in Mainland China.

This systemic literature review is intended to provide a comprehensive mapping of China's music education by analysing and summarising 3120 Chinese research

articles that were published on the CNKI database during 2006-2017. Two types of reviewing methods are used: metadata attributes analysis and thematic analysis by educational contexts. For attributes analysis, two general categories are applied for attribute coding: descriptive attributes retrieved from metadata of articles and analytical attributes that are labelled by 20 trained research students under the supervision of three expert researchers. The thematic review unfolds further discussions on high-frequency topics in China's music education research by educational contexts. The selection of 'qualified' literature for thematic review depends on the combination of several attributes in attribute analysis (such as Reference accuracy, Fieldwork, and Research method) along with consideration of citation rates.

The findings suggest: 1) Teamwork is not very common in the selected articles. 2) Academic writing standards in research studies are under developing. 3) There is complete domination of conceptual over empirical studies, where quantitative and mixed research approaches are marginal. 4) In comparison to tertiary education, research output from pre-school, primary and secondary music educators is still underrepresented. 5) The ongoing education system reform is building upon an 'aesthetic education' that intends to ensure the survival of Chinese music traditions through formal education. 6) A huge part of orientational research studies is formulated with selective individual experiences.

It is argued that the advocated 'research paradigm shift' towards a 'Chines music ecology' implies transformations in both methodology and modality, where the applicability of logical relativism in educational research is under contest.

Comparing Research Paradigms: Qualitative and Quantitative Research

Stephen Zdzinski
University of Miami, USA

This presentation is designed to compare the qualitative and quantitative research paradigms in music education in a concrete manner. The purpose is to examine the similarities and differences of the two major research approaches. Topics include: Defining Research, Research as a Puzzle-Building Process and the importance of theoretical grounding, selecting a topic before selecting an approach, The proposal

format simplified (application to both paradigms), How Qualitative and Quantitative research are similar (purpose, use of data, use of analysis, overall format, and use of theory and literature to provide context for results), How Qualitative and Quantitative Research differs (comparing Assumptions , types of questions asked, focus, role of context, type of data collected, and type of data analysis used), comparing characteristics, applications, and the use of theory in each type of approach, The proposal format for both forms of research, Creswell's Frameworks for qualitative and quantitative research studies, Combining qualitative and quantitative research using mixed method designs (triangulation, explanatory, and exploratory designs), and a comparison of purpose statements in quantitative, qualitative, and mixed methods studies.



Posters

Music Teacher Motivation: A Study Based on the Self-Determination Theory

Rolando Ángel-Alvarado
Universidad Alberto Hurtado, Chile

Music teachers interact with students in classroom situations, hence the psychological status of educators is influenced by social interactions that naturally arise during educational practices. In this study, the purpose is to identify contextual factors that affect music teachers' motivation in classroom situations of primary education. Mixed research methods were applied in the present study as phenomena have been observed from a perspective focused on complex thinking. In this regard, it is important to highlight that 733 music teachers have participated in this study, who come from different Autonomous Communities from Spain. Therefore, the participant cluster is understood as a simple random sampling.

Results demonstrated that music teachers' motivation is frustrated or inhibited by a variety of contextual factors in classroom situations. For instance, student's disruptions in lessons, degree of perceived teacher autonomy, among other examples. Those inhibitors were organised in an objective portrait, allowing to conclude that music teachers' motivation can be supported and frustrated by contextual factors positioned in different levels of the education system. In light of this finding, it is imperative to replicate this study in other contexts with the intention of reaching more understanding about music teacher' psychological status.

Representing Music: Disentangling Diversity in Middle School

Vicent Gil
University of Valencia, Spain

This quasi-experimental design focuses on graphical representation of music. The research study is aimed at determining whether middle school students show positive signs of meta-representational competence (MRC) after an educational intervention in which students were requested to draw while listening to sound fragments, and to play music while watching pictures.

A total of 171 students were enrolled in the study, with a moderate loss because of lack of attendance ($n=37$). The analysed sample ($n=134$) included four classes of first year learners ($n=82$) and three classes of third year learners ($n=52$). The classes were randomly allocated to the experimental (E) and control (C) condition. The C group was divided into subsets C1 and C2.

In order to measure the effect of the intervention, the students took part in a pretest and a posttest. Two control classes (C1) had a brief theoretical explanation about MRC just before the posttest, in order to compare the results with the other three control classes (C2). The independent variables were grade (first, third) and level of treatment (E, C1, C2), while the dependent variables were related to six representational criteria (correctness, completeness, transparency, parsimony, formality, beauty) and three music parameters (pitch, duration, loudness).

The results reveal an overall effect in favour of the E group, which significantly improved after the intervention (Wald $\chi^2(2) = 12.161$, $p = .000$). This outcome is consistent with the scores obtained by first graders, but it seems to be at odds with the pattern followed by third graders, whose improvement was minimum.

As for representational criteria, improvement of E group was almost unanimous, except for parsimony in general, and beauty in third grade classes. Moreover, third grade C1 groups overperformed E groups in correctness, parsimony and beauty.

Finally, as far as music parameters is concerned, no gain related to loudness was obtained in first graders, while third grade E groups worsened in duration. Third grade C1 groups overperformed again E groups in pitch and loudness. Theoretical, methodological and educational implications are discussed.

An Acoustic and Perceptual Analysis of Singers' and Non-Singers' Voices

Ákos Gocsál

University of Pécs, Hungary

The main objective of this research is to find out more about one special aspect of transfer effects of music learning, i.e. whether spoken communication is in any way affected. In this context, most of the researchers focus on the enhanced auditory skills of musicians, while less is known about possible differences in speech production. This presentation is an extension of the research presented at the 33rd World Conference of

ISME, in which acoustic properties of musicians' and non-musicians' speech samples were compared. Although no significant differences were found between the stress patterns of read-out texts in musicians and non-musicians, still many questions remain open. In that research we focussed on instrumental players, now we intend to replicate and extend our research with singers.

Part 1 of the presentation aims at exploring acoustic differences between singers' and non-singers' speech samples. 15 students of classical singing (with at least 8 years of training as a singer) and 15 age-matched non-musician students of the University of Pécs read out the same passage, which are digitally recorded. The following acoustic parameters are measured: mean fundamental frequency, fundamental frequency on stressed syllables, duration of pauses, number and location of pauses (i.e. the number of pauses occurring at syntactically correct and incorrect places), jitter, shimmer, harmonics-to-noise ratio (on sustained vowels). It is hypothesized that singers are more experienced in interpreting and articulating texts than non-singers, therefore their speech is better organised (pauses occur at syntactically correct places), they use more prominent stress (larger differences between the peak and mean fundamental frequency values on stressed syllables), and because of their practice in voice production, they have cleaner voices (more regular vocal parameters: jitter, shimmer, HNR).

Part 2 is a perceptual experiment in which phonetically untrained, non-musician listeners listen to the speech samples and judge if the speaker is a singer or not. We expect that acoustic parameters are reliable indicators of the singers' training in singing, therefore a high percentage of correct identifications is hypothesized. Regression models are used to confirm if the measured acoustic parameters contribute to the judgments.

Although this research is in progress at the time of submission, the results are expected to contribute to a better understanding of one aspect of transfer effects of music learning. As with most of the papers dealing with this phenomenon, a major limitation of this research is that it is cross-sectional (a quasi-experiment), therefore, differences may be demonstrated but it cannot be confidently stated that the differences found are due to the musical training, since we have no data from the participants recorded before they had started learning music.

Adolescent Boys' Music Beliefs, Values and Identity Work in a Single-Sex Independent School

Jason Goopy

The University of Queensland, Australia

Music has the potential to shape and support who we are and who we will become. Adolescents' musical identities can be examined by their uses of music (music in identities) and the musical roles they adopt (identities in music). Musical identities can be shaped and supported by music learning and development, highlighting the potential contributions and responsibility of school music education. This paper presents the overall findings of a doctoral research study investigating adolescent boys' music beliefs, values, and identity work in a single-sex independent school. Qualitative research was conducted adopting narrative inquiry, naturalistic case study, and teacher-researcher reflexivity methods at an Australian independent P-12 boys' school. Data were generated and triangulated using one-on-one semi-structured interviews incorporating a "draw and tell" artefact elicitation technique with ten Year 12 students and their parents. Findings indicate that the music beliefs and values of adolescent boys in this study are mental states which are inseparable from their behaviours and actions, overlapping and fusing together. The students' beliefs, values, and uses of music are interconnected, individualised, diverse, and fluid. They use music as a means of making and managing the self; establishing, developing, and maintaining relationships with others; and developing proficiency in the discipline of music. Adolescent boys in this study used music in personalised and evolving ways as an ongoing resource to shape and support their musical identities and possible selves. The music family script and the conflict between boys' passion for music and their perceived future financial security were also found to influence their identity work. Despite mixed perspectives in the literature, students in this study articulated the view that aspects of school class music had a significant and positive role in shaping and supporting their identity work. The professional teacher-student relationship was a significant factor in student identity work, with boys describing the teacher as a credible model and expert; able to ignite and share passion; and express genuine care towards their learning and well-being. Student flourishing was at the core of the teacher philosophy and pedagogy, occurring through the development of musical understanding, nurturing learner agency, creating a community of ethical music learners, and entangling students' musical worlds. The curriculum was found to value

diverse music literature; sequentially layering simultaneous music domains; and, providing diverse and authentic music learning experiences. This research study contributes new knowledge to the fields of music, music psychology, and music education.

Music and Rug Design: Is There a Relationship?

Amir Javadi, Mamoru Fujieda
Kyushu University, Japan

Rug design and music use symbolic language to express certain concepts with a focus on the idea of unity in multiplicity. This study aims to explore different aspects of Persian rugs, such as concepts, and visual features and to explore the relationship between rug weaving design and music, by utilizing the elements and principles. We observed key elements of rug designs and tried to create an analogy in music. The cognitive method of cross-domain mapping reveals the interplay of repetition, symmetry and asymmetry in music and design.

Aesthetic Experience and Attentional Processes with Audiovisual Stimulus: An Analysis with Dance Students

Ramiro Limongi¹, Ana Lucía Frega², Cecilia Murata², Dionisio Castro²
¹Escuela Superior de Formación Artística "Juan Pedro Esnaola", Argentina
²Fundación UADE, Argentina

Research in Art using CRDI has a fruitful history that has allowed accurate assessment of aesthetic experience during its occurrence (Madsen, 2011). Background studies in the field of music show the measurement of subtle but tangible changes, covering different types of participants, groups, task requirements (Schmidt, 1996), for quantitative, qualitative and mixed research (Madsen et al., 1997) that emphasize its applicability in diverse designs and approaches. Recent studies have expanded the investigation towards other expressions of aesthetic experience in relation to unconventional musical creations, with avant-garde language within the framework of a challenging aesthetic (Frega, Limongi, Castro & Galante, 2016), as well as in other

artistic territories, such as Dance. Attentiveness and music listening were already studied from different perspectives, focusing on specific attributes of music during aesthetic experience (Madsen, 1997). Preliminary results were presented analyzing aesthetic experiences and attentional processes, on university students with majors other than music and dance (Frega, Limongi, Castro & Murata, 2018). Considering previous analyses, the present study analyzes aesthetic experience and attentional processes with dance students with an audiovisual ballet stimulus. Method: While watching a selected audiovisual stimulus (15-minutes selection from Tchaikovsky's Swan Lake, 3rd act), a standardized sample of university students ($n = 32$) with major on performing arts manipulated a CRDI dial in order to record their ongoing aesthetic experiences. After answering the exit questionnaires about the perceived aesthetic experience, psychological tests to assess sustained, alternant and selective attention were applied (Tonglet, 2015a, 2015b, 2015c). Results: Students agree on their perceived aesthetic experience while watching audiovisual stimulus. The aesthetic experiences were mainly positive and intense. Attentional processes show an average profile of performance that enhances selective attention, over sustained and alternant attention. Discussion: Initial analyses of results envision similar consistencies with music studies, continuing the exploration on aesthetic experience with audiovisual stimuli. The complexity of this experience leads to a transdisciplinary dialogue with cognitive psychology; the investigation and measurement of aesthetic experience with focus of attention give rise to the deepening of its analysis (Frega & Murata, 2017, 2018;

Frega, A. L., & Murata, C. (2017, noviembre). *La necesidad de la transdisciplina en estudios sobre focos de atención en arte*. Paper presented at XIV Semana de la Música y la Musicología, Jornadas Interdisciplinarias de Investigación "Cognición Musical. Estudios Interdisciplinarios en Música, Mente y Cerebro". Buenos Aires, Argentina.

Experimental Study of Archetypes of Intonating Consciousness of Musicians

Alla Toropova

Moscow State Pedagogical University, Russia

Theoretical basis. The development of the idea of operationalization of the category "experiencing" led us to an understanding of the psychological importance of distinguishing the observed phenomenon "intonating". It gives an understanding of

the way the individual's experience turns into the expressive language tool of humanity for preserving life important experiencing in the intonation symbols. The psychological concept of the intonating phenomenon can be expounded in terms, the main ones among them are:

The intonating phenomenon that is a form of the primary mental activity of consciousness included in all mental functions as expressions for person himself and others.

The intonating consciousness as a layer of meta-language non-verbal signs that are used in various types of communication, in verbal communication, in targeted and indefinite-targeted expression of experiences. We consider it to be both as a pre-language, and as a meta-level of language consciousness, the basis for the development of non-verbal cultural languages and ethno-linguistic forms of consciousness, including musical-language consciousness.

An intonated experience provides a primary preverbal categorization of sensory experience based on the emotionally experienced understanding of meaning of this situation for a given subject with his unique personal and generic experience of intonated experiencing, that impact psycho-semantic structure of his mind.

The concept of "archetype" differently "sounds" in philosophy and psychology, its content can also include the intonational prototypes of humanity. It was to the archetypes of intonating that the author's research attention was drawn.

The archetypal organization of mental experience formed in ontogenesis from the very first moments of a person's life, creating typical patterns of response and behavior.

Archetypal patterns are colored by an individual unique experience that stays with a person throughout life in the form of individual characteristics of an individual and his individual style of intonating (ISI). These archetypal patterns manifest in the visible and audible intonation of the personality, and resonate while they perceive intonation patterns in music, speech, and plastic.

Semantic characteristics of polarity archetypes of intonating are: tension intensification - voltage extinction, structuredness and periodicity - blurry and non-periodicity of microphases, balance - unbalance (symmetry of the process - its asymmetry in time). These features of the system universal grammar of processes were embodied in the author's system of intonation archetypes, which included 5 + 1 (6) , indicated by greek letters - alpha, beta, gamma, delta, epsilon and omega.

Research and Results

The aim of the study was to identify "archetypical communities" - carriers of sensitivity to a specific intonation archetype and the identification of intergroup test's differences between them.

Sample: Students of the Faculty of Music of Moscow State Pedagogical University (N = 178, 147 - female (82.5%) and 31 male (17.5%)). The average age was 23.7 ± 1.7 years.

Archetypical communities and their intergroup differences were identified in the process of testing the following experimental hypotheses:

- 1 - The response to the proposed musical stimuli in the sample manifests itself in verbal associations in accordance with the statistical regularity.
- 2 - The individual characteristics of the reaction to musical stimuli can become evidence of an unconscious "bias of consciousness" to certain intonation archetypes.
- 3 - Selected archetypical communities of the sample (groups with a dominant archetype) have personal psychometric features (identified through comparison with the results of the 16PF Cattell questionnaire and EEG-methodology).

During intragroup and intergroup comparison of these subjects, a number of features were identified that characterize each of the "archetypal communities".

The bulk of the statistical data processing was performed using the STATISTICA, Inc. software package, version 6.0 and SPSS, version 17, using appropriate mathematical methods and criteria.

For five (out of 16PF) parameters of the Cattell test (G, H, I, L, and Q2), significant differences were recorded with simultaneous comparison of all five groups using the F-test.

Conclusion. The revealed connections of the factors of the personal questionnaire Cattell and EEG-methodology not only coincided in content, but also deepened the ideas about the archetypes of culture, recorded in the types of musical and performing intonation and in archetypal perception when hearing music. The results allow us to understand that the individual style of intonating is deeply and intimately connected with personal characteristics, which can therefore serve as a psychodiagnostic tool for understanding the fine lines of personality traits.

Research continues with the grant support of the Russian Foundation for Basic Research (RFBR), project № 19-013-00171.

Effect of Task Achievement and Performance Error on Feedback

Jennifer Whitaker

University of North Carolina at Charlotte, USA

Feedback is an integral component of the teaching process. Its importance is highlighted in the substantial amount of extant research centered on the topic (e.g., Duke, 2000). Given the impact of feedback in the teaching and learning process, it seems prudent to examine variables that may influence teacher feedback. Therefore, the purpose of this study was to determine how participants' feedback varied based on task achievement and the presence of distractor errors (i.e., an error unrelated to the task).

Twenty-four ($N = 24$) undergraduate music majors provided feedback statements for seven excerpts containing audio of a task statement and subsequent performance attempt which varied in achievement of the presented task and in some cases, contained a distractor error. Task presentation topics were limited to bowing/articulation and dynamics. For performances containing a distractor, the error occurred after task achievement/non-achievement within the excerpt. Analysis included whether feedback statements a) addressed the task presented, distractor error or an unrelated characteristic; b) contained approval or disapproval; c) were specific or non-specific; and d) whether the task topic or the distractor error appeared first or second in the feedback statement. An independent observer analyzed 20% of the statements. Percentage agreement was calculated resulting in reliability of 92.5%.

Results revealed feedback was related to either the task or distractor error in 98% of statements with 96% containing specific feedback. For excerpts in which the task was achieved, participants addressed the task alone most often (51%). For excerpts in which the task was not achieved, they addressed the task and distractor error most often (56%). When a distractor error was present, participants focused on task presentation topics prior to the distractor in 84% of statements, and the distractor alone in 7% of statements. Participants correctly addressed the performance of tasks related to dynamics more than articulation.

Overall, participants' feedback was overwhelmingly specific and related to the task presentation. Perhaps the isolation of giving feedback alone rather than tasks, allowed participants to focus more on feedback rather than what to address next. Another possibility may be that one's ability to provide specific, task related feedback lies in the clarity of task presentation. In this study, the provided task presentations

were clear and concrete, requiring lower levels of discrimination when listening to the performance. In educational settings, teachers must not only select the task, they must present it clearly and be confident in and committed to their task presentations.

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