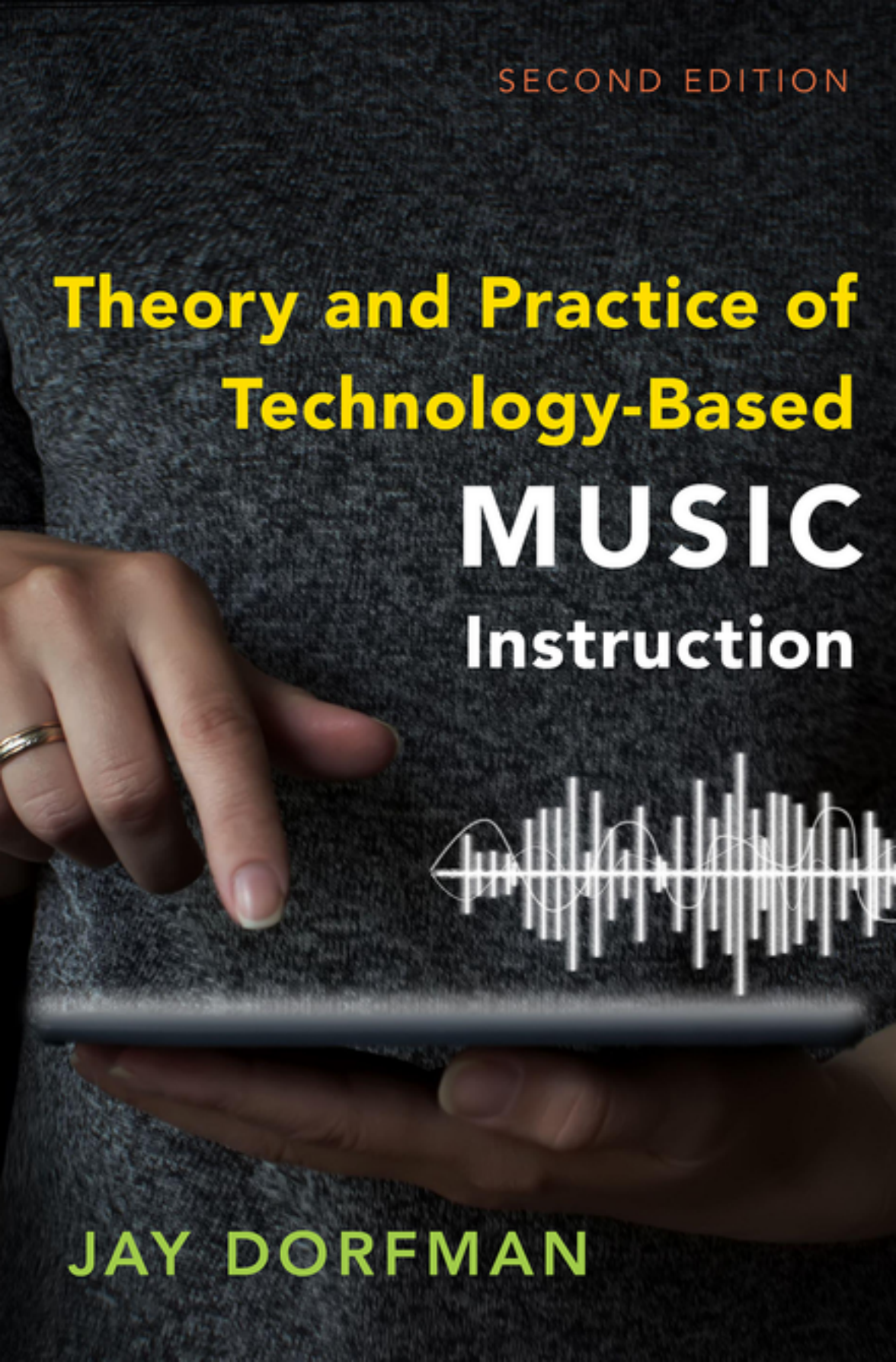
SECOND EDITION

Theory and Practice of Technology-Based MUSIC Instruction



JAY DORFMAN

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Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

Library of Congress Cataloging-in-Publication Data
Names: Dorfman, Jay, author.
Title: Theory and practice of technology-based music instruction / Jay Dorfman.
Description: Second edition. | New York : Oxford University Press, 2022. |
Includes bibliographical references and index.
Identifiers: LCCN 2021034878 | ISBN 9780197558997 (paperback) |
ISBN 9780197558980 (hardback) | ISBN 9780197559017 (epub)
Subjects: LCSH: Music—Instruction and study—Technological innovations. |
Educational technology.
Classification: LCC MT1 .D666 2021 | DDC 780.7/7—dc23
LC record available at https://lccn.loc.gov/2021034878

DOI: 10.1093/oso/9780197558980.001.0001

1 3 5 7 9 8 6 4 2

Paperback printed by Marquis, Canada
Hardback printed by Bridgeport National Bindery, Inc., United States of America

Contents

Foreword

When Jay asked me to consider writing a foreword to the second edition of his impressive book on technology-based music instruction, I was eager to do so. In my career, I have read many books and articles on music technology and music teaching and learning and have tried to write and teach a bit myself on this topic. But I always return to this specific publication when teachers ask me what to read for practical applications with students. The second edition, with its thoughtful inclusion of the role of music technology in our current time, remains as my top choice for teachers who want to make critical decisions about how to actually use music technology in meaningful ways in K–12 education. The book is equally important for college teacher preparatory programs and for community music environments as well.

There are several factors that impress me about this book. The first is its use of profiles in practice embedded throughout which gives an immediate link to the decision process that teachers face each day in considering the why, what, who, and how while engaging students in contemporary music learning. As a person who loves philosophy and learning theory as the basis for culturally meaningful pedagogy, the opening chapters of this book are thrilling for me to read—especially in times of pandemic strife and concerns for diversity, equity, and social justice for all in our design for music education. The profiles in practice are not only centered at the start of the book but continue throughout as topics for informing material choice, methodology, lesson design, assessment, and accountability.

At core, the endorsement of creative exploration of music with technology assistance is another dimension of the book that I cherish personally. The project descriptions that abound in this book are some of the most meaningful I have read since they come embedded in the celebration of creative music experience backed by theory and cultural relevance.

This is a book not about learning the bells and whistles of software or the latest advances in digital hardware. These are topics of importance handled elsewhere in the literature, but not here. Here are displayed the reasons for needing to know the technical; here is the place to understand technology pedagogical content knowledge. Here is explained the importance for teacher education programs in colleges of understanding technology application.

Finally, a compelling reason to read this book is the set of final chapters on the future of music teaching and learning today, especially as it is articulated in the second edition. Topics such as distance education/remote learning, informal learning, non-Western classical music education, and alternative performance ensembles for wider student engagement are all considered as partners to our traditional and important music teaching heritage.

We live in the most exciting and meaningful time for music teaching and learning. Yes, we are emerging from a difficult period as we start the 2021 academic year, but even now we see the silver linings in our instruction of music caused by creative thinking, meaningful technological engagement, new affordances from internet connectivity, and a new awareness of the role of research, philosophy, and learning theory. We even are finally coming to grips with the social and political oppression that has marked recent times and is so horrific to consider in our great country's past. Books like this give us hope and meaning in our professional work. Books like this provide perspectives for changing older practices. Books like this and the many other resources coming from our amazingly talented leaders today bode well for a new landscape of pedagogical change in music and for all of education.

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April, 2021

Acknowledgments

I am so lucky to be able to work with amazing pre-service and in-service music teachers who are curious, motivated, and caring. I thank the teachers who participated in the first edition of this book and who were willing to provide updated material about how their practice has changed in the time since it was published. The participants in the new profiles of practice were fantastic educators who are bringing change to their schools and communities.

Thanks go to Norm Hirschy and the staff of Oxford University Press for their continued support of my work.

I have transitioned to a new job since the publication of the first edition, and I wish to thank my "new" colleagues and students at Kent State University.

My family has been so supportive of my efforts and hours in front of my computer. Especially to my wife, Janna, and our son, Ezra, I am so grateful for you and love you both.

Preface to the Second Edition

The landscape of music education technology has changed in the eight years since the first edition of *Theory and Practice of Technology-Based Music Instruction*. While the first edition was intentionally "agnostic" toward technologies, purposely avoiding much mention of specific software or hardware technologies in favor of a focus on the pedagogical thought used to shape instruction, the context in which educational technology is used has certainly changed. As opposed to the context of teaching and learning in 2013, that of 2021 and beyond is far more focused on issues of diversity and equity. Never have music and the arts been more important as educators contribute to the development of a fair and compassionate society. Also, and no less significant, this edition was completed during the global COVID-19 pandemic. Among other immeasurable ramifications, the pandemic forced a situation in which almost all schooling at every level was moved to remote platforms. In addition to the logistical issues raised by this switch, remote schooling has also proven to be an issue of equity in that access to reliable internet connections and devices is far from consistent.

The technology-based music classroom is not immune to the prevailing discrimination and social justice issues that are pervasive throughout institutionalized music education. In this second edition, I have aimed to integrate ideas of social justice as they relate to music education technology. On the surface these may seem disparate, but it is important to consider that students and teachers bring to their technology-mediated music study their own lifetimes of culture and emptiness, family and isolation, success and challenge. As Frierson-Campbell, McKoy, and Robinson wrote in their review of literature on urban education, "We cannot challenge a problem that we do not acknowledge" (2020, p. 23). While I cannot and would not claim to have profound solutions to social injustices in technology-based music education, new material in this edition is the beginning of my attempt to highlight the problems we face.

In an effort not to stray too far from the structure of the first edition, stories are included in this second edition of teachers who come from backgrounds different from my own, and different from most of the teachers featured in the first edition. In many cases, these teachers have students who are severely impacted by the prevailing social and economic issues of our time. I have tried to draw attention to issues of diversity and equity throughout the text so that they can be a persistent stream of discussion in classes in which students are reading it. Technology-based music instruction, to me, has always been about affording students opportunities to be creative. But societal ills and public health can both shape and stand in the way of those opportunities, so we must discuss them and their impacts on this particular educational context.

It was important as I wrote this edition to refresh other elements of it as well. You will find herein references to much of the important research conducted in the music education technology world since the publication of the first edition (I hope that graduate students, in particular, find the bibliography helpful). I discuss the changing relationship to educational standards, especially to the Music Technology Standards strand from NAfME. I have also revised the items for discussion at the end of each chapter based on my experiences using them as assignments and discussion prompts in my own classes, and in many chapters I have included items for discussion that relate to diversity and equity.

In *Disruptive Classroom Technologies: A Framework for Innovation in Education* (2017), Magana asked an important question that those of us who base our learning on engaging students with technology should consider: "How does the use of technology add value, in terms of unleashing student learning potential, in ways that are not possible without technology?" Each time I consider approaches to technology-based music instruction (TBMI), this question or similar questions are always at the forefront of my thinking. The students I teach, who are preparing to be music teachers or are furthering their professional knowledge after already entering the field, have developed deep understandings of music and how their own students learn. The only reason for teachers to engage students with technology is if it can support or enhance their teaching and their own students' learning. In the final analysis, the impetus for this book is to help teachers *think* about ways they can be intentional in creating meaningful technology engagements in their classrooms.

I have taught technology-based music classes for the last 24 or so years and have tried all kinds of techniques to help students to see the potential of technology to support their creativity. Some of those techniques have stood the test of time; others I like to think of in Gardner's words, as "creative misfirings" (2004, p. 123). Each time I teach a new class, I try to implement new ideas, some from my own thinking, and some from the brilliant teachers who also work in this field. Reflections on those ideas have found their way into this book in one form or another, and I hope they will be helpful to readers.

I have been pleased with the reception of the first edition of the book, especially with its use as a theoretical foundation for several research projects and its adoption in university courses. I hope you will find this new edition to be timely and to spark more conversation about the fascinating topic of music education technology.

1
Introducing Technology-Based Music Instruction

Profile of Practice 1.1

Mrs. Jones has 14 years of teaching under her belt. She received her music education degree from an excellent state university program and completed a master's in music education early in her career during the summers. After teaching at several levels, she has settled in a good junior high school position in an upper middle-class neighborhood. The music department—she and two other teachers—is a collaborative group that consistently turns out strong performances for the school and community.

About five years ago, Mrs. Jones noticed that technology was becoming an increasingly important part of many of the school music programs she considered to be on par with her own. She had introduced some technology in her orchestra class—she used notation software to create warm-up exercises and often played listening examples for the students that she stored on her iPhone. So, with the same enthusiasm that she approaches most of the parts of her job, she approached her principal about funding a computer lab for the music department. Her request was met with excitement. The principal agreed to set up a lab dedicated to the music department and to schedule a class for Mrs. Jones to teach called Music Technology for the following fall. There was no established curriculum for the class, but Mrs. Jones would have the summer to assemble the curriculum and lesson plans, in consultation with the principal and the other music teachers. They all recognized that starting this class would bring new students to their excellent music department and could only draw more public attention to their good work.

The lab would have 15 student stations and an additional station for the teacher. None of the music teachers or the school's administrators had any expertise in designing computer labs, so they left that task up to the district's architects. The information technology (IT) department was enlisted to set up all of the hardware and software and to make appropriate network and server connections, with enough time for Mrs. Jones to get used to the lab before the school year would begin.

The class's enrollment filled up quickly. Mrs. Jones examined the roster and did not recognize any of the students' names, which meant most of them were not involved in the school's musical ensembles. She knew it would be a challenge to teach music to students who were not necessarily trained in reading notation or performing in the traditional sense. Mrs. Jones spent her summer diligently working on her curriculum and lesson plans. She took some courses through LinkedInLearning and watched

Theory and Practice of Technology-Based Music Instruction. Second Edition. Jay Dorfman, Oxford University Press. © Oxford University Press 2022. DOI: 10.1093/oso/9780197558980.003.0001

a lot of YouTube videos so she could develop an understanding of the software she would be using for the class. Despite her best efforts, and the training she received in the use of technology applications during her studies at both the undergraduate and graduate levels, she was not sure she was approaching the class in the way that would provide greatest benefit for her students. Still, she was willing to consider the design of the class, and the daily lessons once the school year began, as a grand experiment. She was willing to be confused sometimes, and she was willing to learn. She was particularly interested in giving students musical opportunities that were more personally creative than any she felt she could offer in her ensemble classes, and she was not afraid to ask for help if she needed it. Still, she definitely did not feel she was "in her comfort zone" and occasionally wondered if she had taken on something she could not handle.

When the school year began, Mrs. Jones had prepared units for her class that would focus on recording original compositions with sequencing software, composing with notation software, making soundtracks for videos, and other projects. She had gotten ideas for projects by talking with friends and doing research on the internet. The class would last for half of the year, and Mrs. Jones's focus would be on helping the students become musically proficient while producing interesting, creative projects.

Mrs. Jones completed the first iteration of her Music Technology class successfully, but she knew there were parts of the class that she could improve. She had been thinking a lot about how she felt more comfortable sequencing instruction in her choirs and orchestras than she did in Music Technology. She felt she could see the "end-game" of the ensemble classes better than she could in the new environment. While she understood and felt comfortable with the skills she wanted her students to develop, she really felt no connection to any theoretical or pedagogical basis for those decisions.

Mrs. Jones had several other concerns. First, she had left many of the choices about software, hardware, and lab design up to other people in the district. Those people made choices based more on economics than on pedagogy. Second, she still felt out of place teaching from her computer station, speaking to her students through a headphone audio system, as compared to standing in front of her ensemble on a podium or at the piano. The assignments she gave to her students were very different from anything she had ever asked her ensemble students to do, which made her feel uncomfortable about how to grade them. Finally, when the principal came to observe Mrs. Jones teaching in her new lab, he had questions about how she had structured the class and whether she was taking full advantage of the capabilities of the lab that had cost the school so much money.

While this account of Mrs. Jones is fictional, the other Profiles of Practice in this text are real, and they reflect similar themes: design of curriculum from the ground up, teaching students with little formal music learning experience, pushing boundaries of music teaching and learning, and wondering if it is all being done in beneficial ways. Although Mrs. Jones was teaching in a setting with excellent support and

enthusiasm for the subject of music being taught through technology, she still felt frustrations and had problems to work through.

Introduction

Mrs. Jones is not alone in dealing with the issues she faced in Profile 1.1. Every day in classrooms throughout the United States, teachers excitedly open the packaging surrounding the latest technological breakthrough or download the latest software updates with improvements that are sure to make their work easier and better. Teachers eagerly dive in to the technology—maybe a new piece of software, maybe a hardware component, maybe a compact, handheld device. Their minds swarm with ideas of how they might integrate this technology into their teaching, and into their students' learning.

Undoubtedly, questions abound. They wonder: Do I have the right technology? Will it help me accomplish what I want it to do in the way I hope to do it? Will it support the learning goals I hold for my students? Do I know how to use it well and to take advantage of all it affords?

Teachers who are in a position to integrate technologies into their classrooms are fortunate. Anecdotally, I have witnessed the power that technology has to engage students in the learning process. Also, most of my students are sophisticated technology users *outside* of the classroom so making use of technology *in* the classroom makes sense. While some schools and districts are certainly more advantaged than others, there is a general consensus from the last two decades that schools have a genuine interest in investing in technology that students and teachers can use to promote better—more effective, more efficient, longer lasting—learning experiences.

The socioeconomic diversity of American schools practically dictates that some schools will be able to provide more technological exposure for students than will others. However, the setting of schools is no longer a significant predictor of their access to technology; that is, schools in urban, suburban, and rural schools are equally likely to have access to technologies such as high-speed Internet connections (Bakia et al., 2009), which is a typical measure of technology access for schools. During the COVID-19 crisis, students' home access to broadband Internet became an even more significant issue, and researchers showed that poor home access has led to decreased academic performance (Hampton et al., 2020).

Despite inequities, the use of sophisticated technology integration is on the rise, and music teachers support increased integration of technology into their classrooms (Ubovich, 2015). Though enrollment in music technology courses remains a relatively small proportion of elective music participation in American schools (Elpus & Abril, 2019), we have seen documentation of increased interest in and frequency of these courses (Kelly & Veronee, 2019), global ubiquity of technology in music teaching, and spread into developing cultures and nations (Akuno, 2018; Kim,

2013). Many more teachers have access to professional development opportunities than they have ever had before, the gap in access across many subjects is closing, and many states are even conducting assessments of student technology literacy in order to promote achievement in skill areas that will be needed in the mid-21st-century workforce (Bakia et al., 2009). Specific to technology-based music courses, Dammers (2010b) found in a random sample of schools in the United States that the socioeconomic status of school districts did not imply a significant difference in availability of these types of classes.

These are great strides in the cause of advancing technology use in schools. Music teachers should be proud of our work toward making technology integration a priority for students, and proud of seeking training to learn to use technology. Music teachers should recognize, however, that the advancements in professional development for teachers and the integration of technology into our classrooms are relatively specialized. The data that support the positive steps measure almost exclusively the integration of technology into English, math, and science curricula. Teachers who receive training in technology integration are most often the ones who teach those subjects, so students' exposure to technology is occurring primarily in the contexts of those disciplines.

To be included in the "technology wave," music teachers have to raise our collective voices and assert our interest in using technology to benefit our own teaching and our students' learning. Music might never be the focus of technology integration in education. However, if music teachers can understand and implement good practices for promoting quality learning of music through technological means, then our profession is far less likely to be left behind, in a cloud of silicon dust. We must understand that technology is not just a set of toys, nor is it just a set of teaching tools. Rather, technology is an important means by which we can teach music—introduce its concepts, reinforce them, provide experience, provide practice, assess and evaluate achievement, structure aesthetic interactions, and do all the educational activities that make learning music a distinct, artful pursuit.

The State of Technology in the K–12 Classroom

The idea of using technology to aid music instruction has existed for several decades and has proven successful in many ways. But early efforts at technology integration emphasized substitution of technology for the teacher (Williams & Webster, 2006; Rudolph, 2004). Technology-based music instruction (TBMI), the kind of teaching examined in this book, updates the notion of "technology *or* teacher" to one of "technology *with* teacher." Music teachers invest their time and intellectual energy in technology to varying degrees. The degree to which they invest is not always their choice—it can be dictated by a variety of factors including training, access, and need.

The Topography of Technology Integration

Through my own observations, I developed a model for categorizing the extent to which teachers engage with technology as part of their teaching, which I now call the Topography of Technology Integration (Dorfman, 2006). I use the word *topography* for three reasons: (1) Topographical features do not exist in isolation. They are surrounded by additional structures that combine to form a broader landscape. (2) While it may be difficult to traverse from one topographical feature to another because there are obstacles in the way (geographically, perhaps a mountain range), it is not impossible. (3) Certain features in a large landscape are generally regarded as more desirable than others. Most people would rather find themselves on a beach than in a field.

The Technical Basin

The technical basin of technology refers to the position when teachers learn to use available technologies and when they acquire fluency with those technologies. For example, budding technologists might learn how to record an instrument or their voice using audio recording software such as Audacity, or to create a simple score in Finale. Classes in technology for music educators are often designed to expose them to the tools currently considered useful for music teaching and learning and to provide practical instruction about their use. If those classes focus exclusively on the acquisition of technical facility, then they fail to serve the needs of teachers to learn to apply technology in educational settings.

At this level, music educators study technology for its own sake rather than as a means for learning music. Mastery of, or at least deep familiarity with, technical skills is necessary to advance to more sophisticated levels of technology integration and to a place in which teachers can *base* their teaching on technology as the major medium for music learning. The difficulty is that many classes about technology for current and future music teachers fail to address pedagogical uses of technology; they focus on how to use technology as opposed to helping future teachers develop an understanding of how music can be effectively taught using technology.

The type of learning that takes place in the technical basin is not detrimental; on the contrary, it is important for teachers to learn to use technology. For some, understanding and using basic technological functions is the obstacle that stands in the way of sophisticated technology integration. At this time, when all music teacher preparation programs are required to expose students to pedagogically appropriate technologies, we owe it to ourselves to be critical of the ways we do so. While we strive to meet the needs of P-12 students, teacher educators miss the boat when we fail to prepare teachers adequately for using technology as a fundamental pedagogical tool.

The Practical Plane

At this next level of technological integration, teachers put their technology knowledge into practice. This includes using technology as a tool for preparing lessons. Popular examples include using software for creating worksheets and handouts, managing aspects of ensemble organization, and recording rehearsals or performances for review.

While these and others are all valid and acceptable uses of technology to enhance music teaching, they are largely teacher-centered pursuits. The examples given are missing a key element of my concept of technology-based music instruction—the idea that *students can and should interact directly with technology*. While the use of a database program for tracking attendance, instrument and uniform inventories, and students' biographical information may be extremely valuable to busy teachers, the benefit of doing so does not often impact student learning directly. Uses of technology such as these are therefore relegated to the practical label because they do not necessarily address directly the delivery of instruction or enhancement of an educational objective.

Practical technology uses can be extremely valuable. They undoubtedly improve the quality of life and work for teachers. The concern is that teachers on the practical plane may claim that they are using technology to enhance their teaching and their students' learning, when in fact they are simply taking advantage of administrative tools. It is possible that teachers fail to make the transition into the use of technology for teaching because they are not prepared to do so.

The Pedagogical Summit

In the most sophisticated level of educational technology, teachers use technology to introduce, explain, reinforce, and provide practice with concepts and skills; to assess student learning; and to develop further learning experiences. Rather than reserving technology for their own uses, teachers operating at this level design experiences in which students engage directly in activities with hardware and software. This practice requires a different kind of pedagogy than teaching without computer technology does. Teachers who have climbed to the pedagogical summit are able to apply educational theory and learning environment design, and employ technology tools while maintaining the integrity of musical content. We might equate this to what Clements (2018) calls "postdigital"—a term that implies less reliance on tools as an adjunct than as an integral part of normal, everyday use.

The three sections are not impermeable. On the contrary, new and experienced teachers can naturally progress from one phase to the next, perhaps even bypassing the practical plane en route to the pedagogical summit. The point is to realize that using technology as the major means for teaching music is a *learned skill*. Teachers of older generations may look on technology as unnecessary or too difficult. Some

may cite Prensky's (2001) idea of the "digital native," but the idea that students and teachers must necessarily be divided over the ways they approach technology in their lives seems at best antiquated, and at worst, wrong.

Though teachers may demonstrate a proclivity toward using technology, it is unlikely that they will be able to do so naturally. There could be several reasons for this:

1. While using technology to learn music is not a novel idea, technological pedagogy is relatively new. Current teachers have few models from their own education of people who do this skillfully.
2. Teacher training (both pre-service and in-service) models to support music technology pedagogy are still developing.
3. Opportunities for improving skills as a technology-based music teacher are rare, and can be difficult to find.
4. Inequities in access and opportunity for marginalized populations, including LGBTQ+ people, people of color, and women, most certainly exist in technology-based education.

The research and practice communities have slowly begun to explore the ways in which students interact with technology and therefore are severely disadvantaged when we attempt to design practical, sequential, educationally sound curriculum for music in technology-based settings.

This is precisely why a guide for music technology pedagogy is needed. The methods described in this book generally assume that teachers have a functional knowledge of technology and applications (as in the technical basin) and are able to transfer that knowledge to uses that support their work (as in the practical plane). But the pedagogical summit is still largely unexplored terrain. We must examine it in terms of its philosophical grounding, the choices it implies that teachers make, and the cyclical assessment for which it calls. The following Profile of Practice includes an example of a teacher who struggled with some typical obstacles. Perhaps you can identify with some of these circumstances.

Profile of Practice 1.2

Mrs. U is a middle school music teacher with more than 25 years of experience in the classroom. She expressed ideas about priorities similar to those of many music teachers—she wants her students to be active and engaged, and she wants varied activities in her classroom to encourage that engagement. Her technology training experiences are limited, but her skills have continued to grow over the years. She said that this growth was out of necessity: she learns new applications when she has a purpose for them, such as learning new digital audio workstation (DAW) and video editing programs to create virtual ensemble videos.

I watched Mrs. U teach middle school general music classes into which she was infusing computer technologies. Many of the musical concepts her students encountered were introduced through lectures enhanced with PowerPoint presentations. She makes interesting uses of technology for preparing the lesson material—she uses YouTube to download music and videos, and iTunes to organize and play back media. She used to face limitations in her school because websites such as YouTube, which might contain explicit material, were blocked from use. She would go the extra mile and download media at home, then bring it to school on a laptop or a flash drive. Thankfully, those kinds of restrictions have been relaxed over the last few years as technology has become more integral to the work of the school.

Despite Mrs. U's interest in using technology, she faces some real challenges. First, because technology is relatively new to her, she was concerned that sometimes her lessons feel like they flow poorly. This is a particular contrast to the way she feels in front of her band classes, where she is natural and hardly has to think to make lessons smooth. She said, "I grew up in the band environment, and it is kind of in my blood. I didn't have general music when I was in school because I was always in band." Second, in her current teaching job, she does not have a dedicated space in which to teach a technology-based music class. Her shared general music classroom has four workstations at one end of the room, and when she puts her students at them, usually in groups, the space gets very crowded. Her only other option is to reserve a cart of laptops in advance.

I observed Mrs. U teach lessons on concepts of theme and variation, and on elements of musicals and operas. Each of the lessons was enhanced through a technology-based activity. In the unit on theme and variation, the students used Audacity to manipulate recordings to demonstrate variation techniques. Mrs. U confessed that if the students were asked what type of lesson it was, they would probably identify it as an Audacity lesson rather than a theme-and-variation lesson. Students were directly interacting with technology, but the limitations of the physical environment and the teacher's limited experience with technology may cause this perception.

Mrs. U told me that the school's recent move to a 1:1 Chromebook model has made using technology with her students much easier. She regularly uses applications such as Soundtrap and WeVideo, often "doing projects that combine the two." Of course, Chromebooks are limited to using only software that resides online, but Mrs. U is a creative teacher and employs online software such as Chrome MusicLab. She said, "Students really like creating pieces with that and were willing to experiment with it to create something that they were proud of."

Mrs. U's integration of technology into her teaching is admirable, and her students enjoy the fact that they are engaged technologically. They take to the activities enthusiastically. Unlike many teachers, she clearly places musical learning objectives in a position of primary importance, and technology is a tool by which she helps her students to achieve those objectives. But I get a sense from talking to Mrs. U that she would love to take her technology-based teaching to the next level.

Teachers' Concerns

Most teachers feel discomfort toward implementing technology in their music teaching (Dorfman, 2008; Taylor & Deal, 2003), and therefore students' needs may be less adequately met than in traditional music learning settings. In this section I will describe some specific concerns that teachers have expressed.

Preparedness

Many teachers say they do not feel prepared to integrate technology into their teaching, so they avoid doing so. This is most likely because they *are* underprepared to use technology in sophisticated ways and want to avoid teaching in ways that make them uncomfortable. This lack of preparedness may result from (1) inadequate training in undergraduate or graduate teacher education curricula, (2) insufficient time to plan for deep technology uses, (3) the ever-changing landscape of available technologies, and/or (4) an inflexible attitude that prevents teachers from feeling successful with technology.

Curriculum Development

It is difficult to teach what we do not know. When called upon to write curriculum that involves technology—which, as seen in the opening Profile of Practice, may include daily lesson plans, large-scale frameworks, or anything in between—teachers balk because they feel inadequate in creating lessons that use tools with which they are not entirely familiar. This is not unlike a biologist teaching a chemistry class, or a woodwind player teaching a group violin lesson—it is a difficult, often uncomfortable process that can only be learned with practice and a willingness to let go of insecurities.

Supporting and Evaluating Creativity

It is easy to think that what we do in traditional music classes inspires creativity. But consider this: the majority of the creativity that happens in a traditional ensemble class (a band, chorus, or orchestra) comes from the director, not the students. The director typically makes musical decisions, listens critically, evaluates, and modifies performance based on her judgments. In fact, we could say that the music production in those classes is largely *re*-creative, indicating a reproduction of music that a composer has already written, rather than creative, indicating the birthing of something novel.