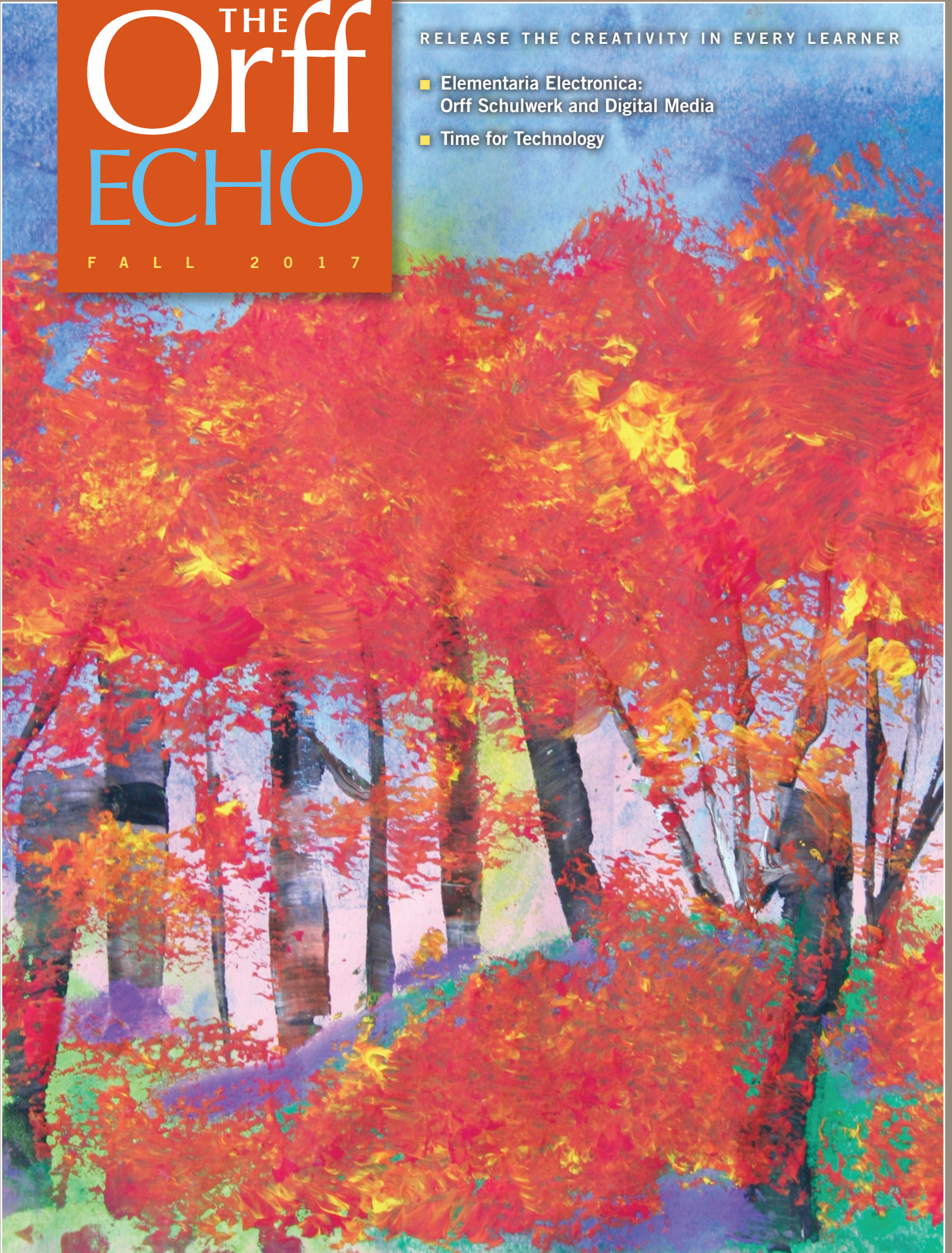


# THE Orff ECHO

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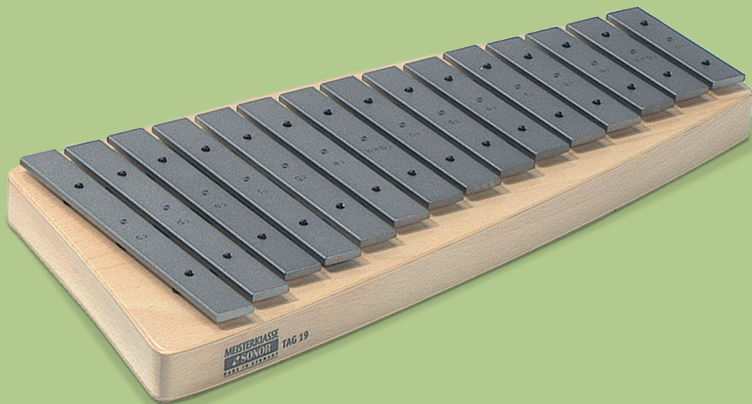
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# THE Orff ECHO

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**VOL. 50, NO. 1**

Published by The American  
Orff-Schulwerk Association

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“Fall Trees” by Charlie Benjamin,  
a student at Berkeley Hall, Los Angeles, CA.  
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RELEASE THE CREATIVITY IN EVERY LEARNER

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## ethics statement

The American Orff-Schulwerk Association strongly encourages members to be positive and discreet when discussing our organization, specific courses and/or teachers, and the Orff approach. The very nature of the Orff Schulwerk philosophy embodies a broad spectrum of expressions, exploring different paths to arrive at artistic and educational goals. Members are encouraged to recognize and remain open to varied approaches and to celebrate both our differences and our similarities.

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## mission statement

The American Orff-Schulwerk Association is a professional organization of educators dedicated to the creative music and movement approach developed by Carl Orff and Gunild Keetman.

### Our Mission is:

- to demonstrate the value of Orff Schulwerk and promote its widespread use;
- to support the professional development of our members; and,
- to inspire and advocate for the creative potential of all learners.

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# PRESIDENT'S MESSAGE

By Tiffany English

## Time for Technology

In this day and time we cannot escape technology. It surrounds us and is more integral to our lives than we frequently realize. For most of us, a day without the Internet is disorienting and frustrating. This is amplified for our students. They have never lived in a world without cell phones, Wi-Fi, tablets, and the various other devices that confound the

digital immigrants among us. Rather than these items being an obstacle to their learning, our students use them as powerful tools. How can Orff Schulwerk practitioners take these tools and make them a successful part of their music classroom? What aspects of technology can we use to support the Orff process or even extend it? These are important questions and ones we cannot ignore.

Technology takes many forms. It can be used to find information quickly, synthesize information, disseminate information, and create new outcomes very easily. Compare this to the Orff process of exploration, imitation,



A large graphic advertisement for 'Teaching With Orff'. It features a portrait of Carl Orff, an elderly man with glasses, resting his chin on his hands. The background is a vibrant, textured red and orange wash with musical notation (staves and notes) overlaid. The text 'no strings attached' is written in a handwritten style above the main text. The main text reads 'A free resource for Movement &amp; Music Educators'. At the bottom left, the 'Teaching With Orff' logo is displayed, with 'Orff' in a large white font inside a red speech bubble shape. The text 'Teaching With' is above it.

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## Welcome New Editorial Board Members

We would like to thank and recognize Nick Wild, Michelle Przybylowski, Kelly Jackson, and Steve Taranto for their contributions and service on the editorial board of *The Orff Echo*. As our colleagues' terms end, please join us in welcoming three new members:

**CHRISTINE BALLENGER** teaches kindergarten through Grade 5 general music in Bismarck, North Dakota. She holds degrees in music education with a bachelor's from the University of Puget Sound and a master's from the University of New Mexico.



She has completed three levels of Orff Schulwerk teacher education and Level I Kodály and World Music Drumming. Christine is on the AOSA list of approved instructors for movement (Level I) and recorder (Levels I and II). Additionally, she teaches courses in music for elementary education majors at Bismarck State College and Dickinson State University.

**ROXANNE DIXON** teaches elementary music and serves as fine arts curriculum coordinator in the Camp Hill School District, Pennsylvania. She holds a master's degree in music education with an Orff Schulwerk concentration from the University of St. Thomas – Minnesota. She has completed Orff Schulwerk teacher education Levels I-III, Master Class, and the Orff curriculum course, as well as training in Kodály and Dalcroze. Roxanne is a member of the Greater Baltimore Orff Chapter and the Philadelphia Area Orff Schulwerk Association where she has served on the executive board and as editor of *The Pentaton*.



**MATTHEW STENSRUD** teaches kindergarten through Grade 5 music and movement at George Mason Elementary School in Alexandria, Virginia. He holds degrees in music education with a bachelor's from the University of Cincinnati College-Conservatory of Music and a master's from George Mason University. He has completed three levels of Orff Schulwerk teacher education and is a teacher educator of movement Levels I, II, and III. Matthew presents nationally on movement and Responsive Classroom in elementary music and was a key content contributor to the book, *Responsive Classroom for Music, Art, PE, and Other Special Areas*.



improvisation, and composition; there are connections to be made. If we see technology as a tool to support and extend the process of teaching, we can make the experience more effective for our students. In this issue of *The Orff Echo*, we will see how technology supports and enhances the work of our colleagues and in turn the achievement of their students.

Consider one of the primary goals of Orff Schulwerk—improvisation and creativity. Technology allows these to happen while making connections to a student's comfort zone and familiar sounds. Powerful improvisation begins when a child feels safe in an environment. Sometimes this safety can come through the available media and sounds rather than other aspects. For example, using electronic loops to promote successful improvisation gives the same security to some as the pentatonic scale. Making connections to the music a child listens to outside of the classroom can be very comforting and can open the door to greater trust. That trust in turn leads to more and more creative and inventive music making.

Additionally, one of the most important aspects of technology for Orff Schulwerk practitioners is collaboration and sharing. This can take many forms, from sharing musical experiences with parents to bringing rare musical exposure to children. How many times have children created something beautiful only for the teacher to have no one with whom to share? Making it a habit to record final products and sharing them through technology is a compelling way to advocate for music programs and to show the intricate work taking place. Technology opens the successes of your classroom to the entire world.

Consider how many times an Orff Schulwerk teacher presents music of other cultures. This common occurrence can be enriched by inviting musicians and teachers who are experts in a particular culture to visit your classroom via remote access, which brings a new dynamic and a note of authenticity and respect to the teaching of another culture. It allows students to see the music organically and provides the opportunity to ask the guest expert questions. In turn, once students learn the song, dance, and stories, they may share their performance

with the expert. In a world where connections between cultures are sometimes lacking, this can open the eyes of many.

In school systems throughout the United States, administrators expect educators to use technology and frequently assess this skill on teacher evaluation systems. By using technology in an organic manner, teachers stay true to the Orff process while bringing perceived validity to their music programs. Administrators may not fully understand Orff Schulwerk, but they do understand technology. Finding a marriage of these two can have a great impact on student learning, which translates to administrative support.

As we begin AOSA's 50th anniversary year, it is a time to reflect on the countless accomplishments of our founders, though at the same time it is an opportunity to think carefully about the future and where Orff Schulwerk and AOSA will be in the next 50 years. I submit technology will not only affect the impact of the Schulwerk in a positive manner, but also will contribute to the growth of AOSA's membership and influence as more and more teachers recognize the value of the organization. Our students have never lived in a world without instant technology, but neither have the young teachers entering the workforce. As Orff Schulwerk practitioners, our goal is for children to create music. As AOSA members, our goal is to "inspire and advocate for the creative potential of all learners." Technology can make both of these happen as we realize their potential through the Orff process and discover the most effective ways to use technology to make those powerful connections in the classroom. ■

**TIFFANY ENGLISH** is the music specialist at Sugar Hill Elementary School in Gwinnett County, Georgia. She holds multiple degrees from the University of Georgia and Piedmont College. Her education also includes post-Level III Orff Schulwerk teacher education and Level I Kodály training. Tiffany has served AOSA as Region IV representative on the National Board of Trustees, chair of the Professional Development Committee, president of the Atlanta Area Orff Chapter, and co-chair for the 2014 AOSA Professional Development Conference in Nashville, Tennessee. She also served on the AOSA Executive Committee as vice president, 2015-2017, and currently serves as president.

## Reverberations: Teachers teaching teachers

See the September 2017 issue of *Reverberations: Teachers Teaching Teachers* for a "Tech Spot" article that includes a lesson idea inspired by the 9th International Orff-Schulwerk Symposium in Salzburg, "Changes?! Elemental Music and Dance Education in the Changing World of Media." <https://aosa.memberclicks.net/september-2017-tech-spot>

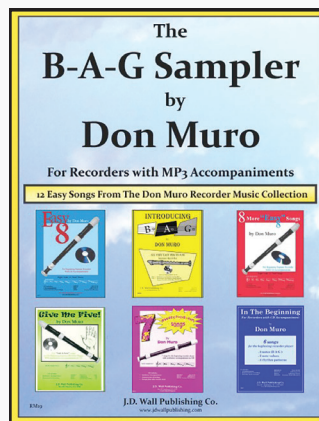


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By Linda Hines with Richard Lawton and Matthew Stensrud

### Elementaria Electronica: Orff Schulwerk and Digital Media

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**T**echnology—the word means the application of knowledge to solve problems. As Orff educators, we thrive on appealing to student curiosity by presenting creative problem-solving opportunities. Yet within our community, unease with technology exists for some, particularly among digital immigrants. Though this discomfort may be a byproduct of unfamiliarity, many Orff practitioners question whether technology, especially digital technology, is at odds with the organic, elemental nature of what we do. Is balance achievable and, if so, what is the point of optimum seamlessness? In this issue, we will explore these questions.

Our foray to the intersection of innovation and elemental music making begins in Salzburg, Austria with AOSA Communications Director Marjie Van Gunten’s article, “Generation C: Preparing the Way for the Next Wave of Digital Natives,” in which the author shares highlights from the 2016 International Orff-Schulwerk Symposium. A major topic of discussion for sponsors and those in attendance was how to integrate the latest tools and ideas with body oriented music making while recognizing that everything about education, from curriculum to how we define a classroom, is changing to make way for Generation C, the digital natives—our students and increasingly our colleagues.

We might assume that young teachers, having come of age in a technology-dependent era, understand and embrace it. As Christine Ballenger reports in her piece, “A Digital Native Speaks: Our Love of Technology Is Not Unconditional!” this is not necessarily the case. Ballenger further asserts the best moment in which to incorporate technology in the music classroom is when it is needed to address a creative objective, never for its own sake.

Mention technology in the music classroom and invariably we imagine a range of computer-driven, music-making devices. The most significant and pervasive form of technology today, however, is mobile application software or apps. In “Integrating Technology: Using General Apps in the Orff Schulwerk Classroom,” Manju Dirairaj describes processes she developed that incorporate the latest advances to generate an enjoyable, enhanced learning experience for students.

One of the basic functions of classroom technology is to enable communication and store information. With a little ingenuity, however, that storage space can be turned into a venue for sharing and displaying student work. Natasha Thurmon’s article, “Harnessing the Cloud for Professional Collaboration and Audience Engagement,” describes how she and her non-music colleagues used the Cloud to facilitate a cross-curricular event that showcased connections between music and art that would not have been possible without a place in cyberspace for teachers to collaborate.

What if we could take the possibility of digital music-making devices a step further with student-driven creations? Ryan Bledsoe, in her piece, “Enhancing the Instrumentarium: Contemporary Instrument Makers and Their Digital Tools,” showcases what happens when imagination meets innovation. Citing specific cases, Bledsoe relates how teacher and student instrument makers use contemporary digital technologies to realize the underlying Orff priorities of instrument accessibility and quality.

Integrating technology with Orff Schulwerk is not new. Each generation of Orff teachers has sought ways to utilize the latest tool or the most up-to-date version, be it audio recording, radio, or video. What has changed is simply what we consider state of the art. In our final article, “Flip Books at an Exhibition: Integrating Animation and Orff Schulwerk,” James Harding touches on this as he relates how a chance encounter with flip books, a technological marvel from the end of the 19th century, led to a process for designing animation in the music classroom using 21st-century video software. The resulting series of engaging activities has continued to evolve as technology and technique improve.

This issue’s children’s book reviewers, Tiffany English, *Let’s Play!* and Kaethe Grabenhofer, *The Noisy Paint Box*, present activities you will enjoy adapting to impart valuable lessons to your students while piquing their curiosity

and creativity and encouraging adventure and discovery. Jennifer Dennett, in her review of *Meaningful Movement: A Music Teacher’s Guide to Dalcroze Eurhythmics*, relates several techniques for implementing authors Marla Butke and David Frego’s student-centered lessons and activities in your classroom to enrich meaningful movement exploration.

Orff practitioners embody the principles of exploration, imitation, improvisation, and creation. The processes and techniques imparted here demonstrate just a few of the many ways digital immigrants and digital natives alike can harness this power to complement these primary Orff principles. ■

**LINDA HINES** is editor-in-chief of *The Orff Echo*. Issue coordinators **RICHARD LAWTON** and **MATTHEW STENSUD** collaborated on this piece. They are both active Orff teachers and enthusiasts, and members of *The Orff Echo* editorial board.

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# Generation C: Preparing the Way for the Next Wave of Digital Natives

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**MARJIE VAN GUNTEN** retired after 40 years of teaching music to early childhood through college students. Her training includes bachelor's and master's degrees in music and post-Level III Orff Schulwerk teacher education. She has served on *The Orff Echo* Editorial Board and is currently the AOSA communications director. Marjie is grateful to AOSA for making it possible for her to participate in the 9th International Orff-Schulwerk Symposium.

## ABSTRACT

*How can technology be used effectively by Orff Schulwerk practitioners in ways that support and enrich their work? In this article, the author identifies some of the questions surrounding appropriate use of technology in music and movement education and the opportunities and challenges it poses, and examines the creation of a context in which new media makes a useful contribution to artistry and the creative process.*

## By Marjie Van Gunten

If you think about the changes in technology that have taken place over the span of your career as a music teacher, and compare this to the technological changes that have transpired over the course of your life, you get a clear sense not just of the degree to which things have changed, but also of the accelerating pace. When we project this rate of acceleration ahead to the teaching career of someone entering the profession today, it becomes obvious that none of us can really predict what teaching will be like in the near future, except to say it will be quite different. Will the traditional limits of instruction and the physical classroom even apply anymore? What new types of access to music and dance will exist and how will this manifest itself in a broader cultural context?

The challenge of change was explored at the 9th International Orff-Schulwerk Symposium, July 7-10, 2016. The Symposium, generally held every five years at the International Orff-Schulwerk Forum and the Mozarteum University in Salzburg, Austria, invites teachers from across the globe to meet, learn, and share around a common theme. This year's theme was "Elemental Music and Dance Education in the Changing World of Media." In lectures, workshops, performances, and the conversations that followed, we were invited to think

deeply about the role of digital media in the Orff Schulwerk classroom:

What is the importance of body oriented music making, sensitization of aesthetic perception, and the differentiation of individual expression through music and dance in the light of technological possibilities in a society that is shaped by digital influences? Which media support and enrich our work? (International Orff-Schulwerk Symposium Brochure, 2016)

### Change as Creative Catalyst

In the months prior to the Symposium, local secondary schools were invited to explore ways in which digital media can be used as a tool for artistic perception. Performances by these students, who are fluent in the “language” of technology, modeled some ways in which the questions posed for discussion at the Symposium might be addressed. Students of elemental music education, led by Professor Rainer Kotzian from the Hochschule für Musik in Nürnberg, Germany, created a “dance” of flashlights, activating photo-sensors that produced tones used, in turn, for improvisatory dance. These students also created dances using three dimensions: the dancer, the room, and a video screen. The changing images on the screen led to new movement ideas while the audience took in the whole created by the unity between dancer, image, and improvised music accompanying the movement.

Dance students from the Artistic Grammar School in Salzburg, Austria used a movement-activated app to create digital sounds that were translated back into improvised movement. Outside of their dance classes, these students created audio and video tracks that were then used in the classroom as background music or visuals for live, improvised dance performance. In this case, the students were fluent with the digital media and needed no teacher assistance with the technology. The instructor made it very clear, however, that the entire process began with movement improvisation to collect ideas that drove the creative process.

In the discussion that followed, student performers had some interesting, and perhaps surprising, things to say about their learning experiences. Some stated that digital media offered too many options, and one of the challenges was to narrow the choices to those that served their artistic goals. Cultivating

this sort of self-reflection during the artistic process has obvious parallels in a non-digital learning environment and is a well-established objective in the Schulwerk. Another challenge identified by students was creating digital sounds that are as “fun and artistic” as traditional instruments.

The question of how to integrate the tools of technology into an Orff Schulwerk classroom is not new. Over 20 years ago, Steven Calantropio addressed this topic in *The Orff Echo*, articulating the importance of active music making while acknowledging that musicians have always used tools (e.g., instruments, recordings, photocopies). He discussed ways in which technology might enhance the music classroom and also warned, “one must be careful never to allow a tool to become an end in itself rather than a means to an end” (Calantropio, 1996, p. 25).

At the 2016 Symposium this relationship between tools and active music making was an important part of the conversations. For the students who performed, the use of digital media, in and of itself, is clearly motivating. At the same time there was a consensus among these young performers that digital sound is simply one more tool, not a preferred tool, for creating music. This is not a minor point, because the concern about using digital media in the Orff classroom is that it becomes the goal, not the means. By contrast, these student performers had concluded on their own that digital tools were useful only in so far as they contributed something useful to the creative process. It is a reminder that we as teachers must maintain a focus on “body oriented music making, sensitization of aesthetic perception, and the differentiation of individual expression through music and dance” (IOSSB, 2016) in order to have a context in which to integrate new media as something that expands, not replaces, existing artistic tools. By modeling creative work that went far beyond the use of hand-held digital devices, the Symposium performances invite us to expand our expectations for which technologies to bring into the classroom.

### Change as Challenge

One of the challenges for the educator trying to keep up with the rapid development of technology is that new tools require new training. As it is, the cycle of new instructional programs and textbooks, and even teaching philosophy, require most teachers

**Figure 1.** Professor Rainer Matthias Holm-Hadulla in Dialogue with Anna Maria Kalcher, Research Associate at the Mozarteum University Salzburg.



PHOTOGRAPHER: ARNOLD BECKER. USED WITH FRIENDLY PERMISSION OF THE ORFF INSTITUTE, MOZARTEUM UNIVERSITY SALZBURG.

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to engage in ongoing professional development. The rapid rate of change in the digital world escalates this demand on a teacher's time, especially for the "digital immigrants" among us. As new technology emerges, teachers will need constant retraining and an ability to be flexible with new devices, applications, and equipment.

The demand for training time also affects students learning to use specific technology to achieve artistic goals. If the learning curve outweighs the artistic experience, the value of using the tool must be questioned. We make similar choices regarding the introduction of instruments for young learners, and there is no reason to abandon the logic behind such choices. When pressed to demonstrate use of technology in the classroom, teachers may need to become articulate advocates for the value of whole-body movement experiences, the importance of being part of an ensemble of acoustic instruments, and the musical imperative of using one's voice as an instrument. As technology takes a more prominent

place in the classroom, it must not be allowed to replace other essential ways of learning.

An additional challenge, when it comes to the use of technology, is ensuring equal access. This particular topic was addressed at the Symposium by Rainer Matthias Holm-Hadulla, professor for psychotherapeutic medicine at Heidelberg University, Germany (see Figure 1). During his lecture, "Fostering Creativity and Media Literacy," Professor Holm-Hadulla expressed less concern that early introduction of digital media hurts the child (as long as it is not too early) than what it might do to the economic gap across schools. Many teachers already struggle to obtain funding for the musical instruments essential for an Orff Schulwerk program. The additional cost of digital media and the difficulty obtaining it can only increase this equity gap from school to school and even from classroom to classroom.

Perhaps the biggest digital media challenge for Orff Schulwerk practitioners is framing the

questions that will help us make decisions about which media to use and how to use them in ways that support and enrich our work. Following are a few of the questions that emerged during conversations with other participants at the 2016 International Orff-Schulwerk Symposium. This dialogue is sure to continue as we encounter new media and as digital natives replace digital immigrants in the profession.

- How can digital media complement—not replace—the tools students use for artistic expression?
- What skills and knowledge in music and movement do children need before using digital media tools for artistic expression?
- How do we build meaningful bridges between digital media, human beings, and artistic expression?
- How can music/movement educators influence the development of media that serve artistic expression?

These questions assume artistic expression is at the center of our work and technology is a servant. Balancing the importance of body oriented music making, sensitization of aesthetic perception, and the differentiation of individual expression through music and dance (IOSSB, 2016) with digital media requires music teachers to think about the types of digital literacy we want to support. Although students may be adept with a tiny keyboard, it is not assured that this skill transfers to the whole-body, movement-based learning that happens within Orff Schulwerk lessons. For example, balancing technology and aesthetic experiences requires that students blend their expertise as digital natives with the type of community-based, movement-inspired, and creativity-filled exploration that typifies an Orff Schulwerk classroom.

### Cultural Change

Although it is not a new idea, it has become fashionable recently to argue that artists and teachers in the arts have responsibility to make “citizenship” a consideration in their practice. In their new book, *Artistic Citizenship: Artistry, Social Responsibility and Ethical Praxis*, David J. Elliot, Marissa Silverman, and Wayne Bowman assert, as John Dewey did, that the arts must be integrated “with personal and community life” (Elliot, Silverman, & Bowman, 2016, p. 5). It is

hard to argue that digital media and the use of technology are not a significant part of every aspect of community life today.

Symposium lecturer Thorsten Meyer, professor for art and its didactics at the University of Cologne, touched on this theme in his talk, “Next Arts Education: Cultural Education in the 21st Century” (see Figure 2). According to Meyer, “Next Art” represents a change in the way art works are accessed. Rather than viewing art in a museum, we may encounter “Next Art” as urban graffiti, digitally altered images shared on the Internet, or peer file sharing like Dead Drops (deaddrops.com). These “Next Art” examples from the world of visual art invite musicians to consider ways in which flash mobs, online digitally altered music and videos, or virtual choirs are expanding definitions of audience and performing arts. Of course, as the next generation of digital natives emerges, this art will, no doubt, cease being “next” and instead will simply be art that is customarily made and shared.

Professor Meyer described digital natives as Generation C: computerized, connected, communicating (e.g., texting), clicking, community-oriented (e.g., social media), collaborative/co-creative, cyberspace creatures, copy/paste experts, and cultural hackers (e.g., digitally altered art). According to Meyer:

**Figure 2.** Professor Torsten Meyer in Dialogue With Sonja Stibi, Director of the Orff Institute, Mozarteum University Salzburg.



PHOTOGRAPHER: ARNOLD BECKER. USED WITH FRIENDLY PERMISSION OF THE ORFF INSTITUTE, MOZARTEUM UNIVERSITY SALZBURG.

Education—as we understand it—accepts the future as an immediate responsibility. ...A serious education recognizes art and art teaching as practice fields and rehearsal grounds, as indicators of possible interfaces and as a catalyst for change, as expanding boundaries and surviving occasional crash tests. (Meyer, Golb & Schütze, 2015, p. 92)

The choice is not really whether we will use technology, but how it will be used. Apart from the practical considerations, technology is the “language” our Generation C students and colleagues speak. Our obligation to learn their language is every bit as

imperative as honoring their heritage. Fortunately for them, and for us, the Orff approach lends itself extremely well to meeting students where they already are and teaching them there.

### Conclusion

In his article, “Digital Natives, Digital Immigrants,” author Mark Prensky characterized the arrival and rapid dissemination of digital technology at the end of the 20th century as a change “singularity” from which there is no turning back, and he argues that the very thinking patterns of children have been altered (Prensky, 2001). The implication of this



PHOTOGRAPHER: CHRIS ROGL.

Students from the Orff Institute Perform *Lage 8* With Percussionists Exploring the Personalization of an Object.



PHOTOGRAPHER: ARNOLD BECKER.

Performance Ensemble of the Orff Institute, *Das Collectif*, Perform Their Piece, “Limes.”

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is that digital immigrant instructors who speak an outdated pre-digital language struggle when trying to teach a population that speaks an entirely new language. It is worth noting that Prensky's observations were made almost two decades ago. The digital native teachers of that time are most likely the digital immigrants of today—unless they have continued to update their understanding.

As the 2016 International Orff-Schulwerk Symposium concluded, a consensus had formed that we are still at the early stages of development of applications that may be appropriate servants of artistic exploration. One way to encourage progress in this arena is to identify new things technology can bring to the music classroom that expand upon existing tools, or open new doors, for creative expression. In her remarks on the opening day of the Symposium, Sonja Stibi, professor for elemental music and dance pedagogy and director of the Orff Institute, suggested that Orff teachers become “prosumers” of technology. We must be thinking ahead of the developers to influence new products that will become tools for artistic expression.

As Generation C digital natives enter the teaching profession, they bring with them a kind of natural

fluency with technology, but proficiency with digital media is not enough. Training music and movement teachers to look at new technologies as tools with a pedagogical purpose, not as ends in themselves, is crucial if this change is to address the question, *which media support and enrich our work?* Teachers who are steeped in “the importance of body oriented music making, sensitization of aesthetic perception, and the differentiation of individual expression through music and dance” (IOSSB, 2016) will be better prepared to sift through the digital choices and identify options that work toward these artistic goals. As for the International Orff-Schulwerk Symposium, the next one will take place in 2020—in digital terms, practically a lifetime away. ■

**Author's Note:** To help members stay current on recent additions to digital tools that support Orff Schulwerk teachers, AOSA includes periodic reviews of new applications in the monthly, online publication, *Reverberations: Teachers Teaching Teachers*. These columns are also archived on the member-side of the AOSA website.

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# A Digital Native Speaks: Our Love of Technology Is Not Unconditional!

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**CHRISTINE BALLENGER**

teaches kindergarten through Grade 5 general music in Bismarck, North Dakota. She holds degrees in music education from the University of Puget Sound and the University of New Mexico and has successfully completed three levels of Orff Schulwerk teacher education. Christine is the current president of the Prairie Winds Orff Chapter and recently joined *The Orff Echo* Editorial Board.

**ABSTRACT**

*As digital technology becomes more prevalent in schools throughout the world, Orff Schulwerk teachers are seeking meaningful ways to incorporate it into their lessons, raising the question, how effective is technology when measured against singing, moving, or drumming together? In this article, the author examines the issue of finding a balance between traditional music making in the classroom and the possibilities technology and electronics offer.*

**By Christine Ballenger**

**W**hile touring the campus with the principal at my first teaching job in 2012, I remember being amazed at the technological changes that had occurred since my own elementary school days. This school had interactive whiteboards, digital projectors, and even some iPads in the classrooms. Unfortunately, none of this technology was available in the music room, though a laptop and video projector were provided.

I coveted the technology classroom teachers were given and throughout the year often raised the subject with administrators, asking for comparable technology in my room, arguing—without much actual experience—that students would benefit from it, as they seemed to in their regular classrooms. “We don’t have the money,” was always the answer, and that was that. Sometime later, while attending my first Orff workshop to learn more about using xylophones, I discovered an entire world called Orff Schulwerk, and xylophones were only a small piece of it. The technology could wait.

Soon I acquired my own iPad, technically a half-interest in an iPad with my husband. When the new school year started, I downloaded several apps and

began playing around with GarageBand, determined to use the iPad with students and illustrate our need for more technology in the classroom. It was going to be a game-changer! That iPad traveled to school a few times, but it never left my bag. I just could not figure out how to use only one with an entire class. Why would we be happy and satisfied watching each other use it? Besides, my Orff Schulwerk teacher education started that summer, and activities such as helping my students create small movement pieces and group-created “B sections” to the songs we were learning took precedence. Once again the technology would have to wait.

### Effects of Technology on Student Achievement

Others shared my desire to obtain state-of-the-art technology for the classroom. School districts across the country have taken on one-to-one implementation of technological resources, typically laptops, Chromebooks, or iPads. With this trend has come both success and serious missteps, the Los Angeles United School District’s (LAUSD) controversial 2013 plan to purchase 1.3 billion dollars’ worth of iPads perhaps being the most public (Blume, 2014). Current educational research continues to study the effects of one-to-one implementation. Although one recent meta-analysis of 10 such studies found a statistically significant improvement of students’ academic achievement, particularly in language arts, math, and science (Zheng, Warschauer, Lin, & Chang, 2016), other studies have been too limited in their sample sizes to draw overarching conclusions about the effectiveness of one-to-one devices.

Before LAUSD’s program was suspended in 2014, researchers found the most prevalent use of iPads in classrooms where they were being used (in many they were not) was for whole-group instruction, with everyone engaged in the same activity at the same time. Further analysis of whole-group instruction revealed the device was used only 5 percent of the time for interactive content. The iPads served mainly as a replacement for an overhead projector or as tools for student work. The least observed uses were individual instruction delivery, student collaboration, and art or music composition. More common was using iPads for nonacademic purposes, such as students playing games or watching videos after finishing their work (Margolin et al., 2014). These findings are consistent with what has been

observed in other schools or districts. The devices are useful, but their presence does not change how educators teach. Although availability of technology has greatly risen overall, the actual use of those resources has remained low, due in part to teachers’ lack of technological skills, time for teachers to learn and manage the technology, and lack of technical support (Delgado, Wardlow, McKnight, & O’Malley, 2015).

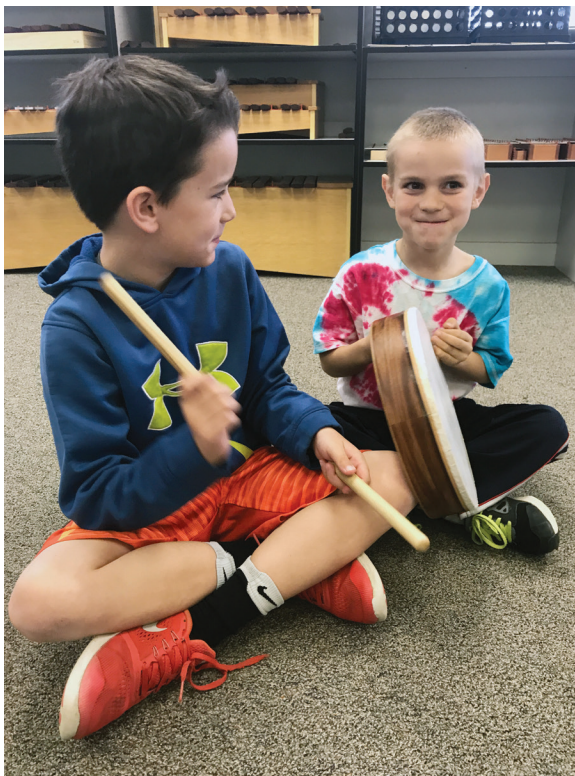
Studying the role of one-to-one implementation specifically in music classrooms, Dorfman (2016) observed four music teachers in four different schools where one-to-one technology was being used. Whereas some teachers used the devices in ways that supported technological goals and objectives, others used them primarily for administrative purposes such as scanning music and reading from iPads instead of sheet music, documenting student work, videoing student performances, and so on. Only one teacher in the study reported success creating music with his students using GarageBand. The others admitted to having difficulty finding authentic ways to implement the devices in their teaching.

Others studying the effects of technology on the music classroom have suggested using technological devices to aid in the creation of music to integrate them more authentically into the music classroom (Riley, 2016) or to meet the individual needs of students by making up for a lack of physical instruments (Carlisle, 2014). These suggestions, however, ignore the underlying questions: *Just because the technology is there, do we really need to use it? Are experiences with digital technology and music making more effective than the experience of singing, moving, or drumming together?*

### iPads Versus Instruments

Relocation to a school in another state offered me the opportunity to see firsthand what working in a state-of-the-art classroom was like. This district had just switched to all Apple products, and each teacher was given a MacBook Air, an iPad mini, and an Apple TV to use with projectors. Every classroom had a set of iPads, and classroom teachers told me students could bring them to music class! Again I downloaded free apps, compiled a wish list of those that required purchase, and then never used the iPads for anything beyond videoing and photographing student creations.

**Figure 1.** First-Grade Students Taking Turns Sharing Created Rhythm Patterns.



PHOTOGRAPHER: CHRISTINE BALLENGER. USED WITH PERMISSION.

In spite of best intentions, it seemed iPads had no meaningful place in my instruction. I didn't want my students playing games to test their note-reading skills when they could instead learn a melody, decipher the solfège and apply it to a xylophone, and then perhaps view the written notation on a staff. Moreover, as an Orff Schulwerk teacher, my practice was to encourage collaborative music making (see Figures 1 and 2). As we have all observed, interaction with a personal device, be it a phone or a tablet, does not promote peer interaction—quite the opposite.

Apparently, many of my students shared this concern. The first time I turned on the interactive white board, some students sharply inhaled, and one asked, “We’re not going to stop playing the instruments, are we?” When I replied, “No...,” the student said, “Oh good. Last year all we seemed to do was watch the board.” Fourth- and fifth-grade students have told me they hate technology, or they’re tired of it. This sentiment still surprises me, as it is easy to assume students always want to use the technology that surrounds them.

**Figure 2.** Second-Grade Students Experimenting With Group-Created Symmetrical Shapes at Different Levels.



PHOTOGRAPHER: CHRISTINE BALLENGER. USED WITH PERMISSION.

Although technology should not be used simply because it is available, it is important to recognize the need to promote digital literacy across the curriculum. School districts seem to recognize this as well, as is evident by their emphasis on 21st-century skills. Along with a focus on digital literacy and technological integration, they promote the idea of the Four Cs of critical thinking, communication, collaboration, and creativity. The Four Cs and the use of technology are often framed as necessary skills for students to develop. According to Logsdon (2013), one issue with this emphasis is “current advocacy claims that include the words *21st Century* tend to emphasize discrete workplace competencies or *skills*” (p. 52). Instead of a focus purely on skills, there instead should be an emphasis on making various processes of inquiry a habit and one that leads to further development and growth (Logsdon, 2013). Thus far, research into the implementation of one-to-one devices for students in schools tends to demonstrate that the most immediate effect for students is improvement in their technological skills, followed by improvement in their content

knowledge and/or 21st-century skills (Doran & Herold, 2016).

The argument that we are too focused on the development of “skills” is an interesting one—one that may be reflected in the changes made in updating the 1994 National Music Standards to the 2014 National Core Arts Standards in Music. The 1994 standards were based on the acquisition of skills (a person can sing alone and with others), while the 2014 standards focus on the artistic process—creating, performing, responding, and connecting. While schools are working toward the development of those 21st-century *skills*, arts standards are shifting their emphasis toward the development of creativity. Perhaps the integration of technology in the music classroom, and all classrooms, will eventually reflect this shift from skills-focused to process-focused as well; once we are confident in our technological skills, we can focus more on their authentic use.

### Technology in the Orff Schulwerk Classroom

Of course, there is a school of thought that technology should have a limited place in the Orff classroom. Although we have many wonderful technological tools to aid in instruction, what we do requires a level of visceral connection that can be hard to achieve when the experience is filtered through the prism of technology, however artfully it can be done. As Doug Goodkin (2009) has observed, computers and other one-to-one technology tend to promote a sense of detachment and minimize the “sensual delight” found in active music making.

The apparent contradiction between my students’ expressed weariness with technology versus their perpetual use of personal devices outside the classroom bolstered my inclination to stop looking for ways to integrate more technology into classes. The question Goodkin posed at the end of his 2009 article in the *The Orff Echo* helps explain this shift: “What do my children need that only I can offer them and they’re not likely to get anywhere else?” (p. 23).

Just when I had decided technology would be a lower priority in my classroom, a concert by Dave Douglas and High Risk, an experimental jazz quartet with Dave on trumpet, Mark Guiliana on drums, Jonathan Moran on bass, and Zach “Shigeto” Saginaw on electronics caused me to re-evaluate. Shigeto, with his laptop, electronic drum pad, and other devices I couldn’t begin to identify, interacted with

As technology and its capabilities become more important in our lives and the lives of our students, we need to be prepared to embrace and encourage its use as well.

his bandmates’ performance in a stunning display of the beauty of sound, complexity of layers, and synergy between all members of the band. As an Orff practitioner, I dissected how the layered ostinati interacted, appreciated how the nuanced melodic ideas changed and transformed, and enjoyed how the band members played off and added to each other’s improvisations. The electronic elements of High Risk and Zach’s approach to sound were particularly exciting, as they mirrored the playful experimentation I encouraged in my classroom and have experienced in Orff Schulwerk teacher education. If electronic sound has a place in the jazz world, surely it has a place in the Orff classroom as well.

### Conclusion

As Peter Webster (2009) stated in *The Orff Echo* in his article, “Music and Technology”: “Music itself is the focus, and the technology simply supports it” (p. 12). Perhaps this was my struggle. As a new teacher my focus was on technology first, music second. With a focus on music first, and more importantly, collaborative music making, my once-pressing need for technology has fallen by the wayside. The ideal solution for using technology beyond as a tool or supplemental device for teaching still eludes me. The power my students draw on during their collaborative music making with xylophones, recorders, drums, voices, or movement is an experience that surpasses anything I’ve facilitated using the technological resources at hand.

How do we work to find a balance between music making using traditional instruments (see Figure 3, p. 20), without neglecting the possibilities technology and electronic music offer? I do not have an answer, but look forward to one day finding a way to use technology for something other than simply recording students and their creations. Carl Orff believed it was important to use the music of students’ own cultural heritage. As technology and its capabilities become more important in our lives and the lives of our students, we need to be prepared to embrace and encourage its use as well. We need to continue to seek meaningful ways to

**Figure 3.** “Tools” Used in My Music Classroom.



PHOTOGRAPHER: CHRISTINE BALLENGER.

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incorporate technology into our teaching, ways that facilitate music first, new exploration, creation, and previously inaccessible experiences.

GarageBand remains high on my list of potential creative technological explorations, but the pressing

need to have the resource has dissipated. My students and I are currently far too captivated using the “old-school” resources of our voices, bodies, drums, unpitched percussion, and xylophones to worry about adding in digital sound. Not yet, at least. ■

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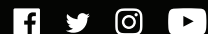


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# Integrating Technology: Using General Apps in the Orff Schulwerk Classroom

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**MANJU DURAIRAJ** studied music in Pune, India, Middlesex University, London, and VanderCook College of Music, Chicago. Manju has completed all Orff Schulwerk teacher education levels as well as a number of master classes. She currently teaches pre-K through Grade 5 general music at the Latin School of Chicago, and is an adjunct professor at VanderCook College of Music. She is past president of the Greater Chicago AOSA. Her publications with Hal Leonard include *Interact with Music Assessment Level 1*, *Interact with Music Assessment Level 2*, and *Technology in Today's Music Classroom*.

## ABSTRACT

*Integrating technology in the Orff Schulwerk classroom may seem daunting to teachers unfamiliar or uncomfortable with technology. In this article, the author shares her experience using technology to provide students with more time to explore, improvise, and create, while harnessing its power as a platform for teachers to document and illustrate the efficacy of the Schulwerk.*

## By Manju Durairaj

A hush falls over the room as fourth graders quickly self-regulate their giggles and shuffles. A cowbell rings out eight introductory beats, and four 4th graders begin sharing a rhythm stick and drum routine they collaborated to create. As they move, connect, and interact with each other, singing and performing their complementary rhythms and movement, four other students move silently around the room, filming the performance on iPads. This video is being recorded in an app, Seesaw: The Learning Journal, that allows the clip and the notated complementary rhythms to be uploaded into the performers' digital portfolios. The students finish to a warm applause from their peers, who give them constructive feedback electronically using a template that was uploaded earlier to Seesaw. The next group of performers takes their spots and begins to share their composition. The process continues until all the groups have shared their work and the class reaches a happy conclusion. They then exit into the hallway singing and dancing with their iPads under their arms until they are shushed by their classroom teacher.

The sequence described here was part of a unit of three lessons that ranged from learning a song from another culture, exploring various body percussion patterns, and transferring these to unpitched percussion

**Table 1.** NETS Standards for Teachers and ISTE Standards for Students.

NETS Standards for Teachers, 2008	ISTE Standards for Students, 2016
Standard 1. Facilitate student learning and creativity	Standard 1. Creativity and innovation
Standard 2. Design and develop digital age learning experiences and assessment	Standard 2. Communication and collaboration
	Standard 4. Critical thinking, problem solving, and decision making

SOURCE: NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS FOR TEACHERS; INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION.

instruments, to improvising, creating, and notating a B section that involved complementary rhythms and creative movement. Developed within the Orff Schulwerk framework, the unit centered on student-directed exploration that led to student-created composition, and coincidentally met the National Educational Technological Standards for Teachers (NETS) and the International Society of Technology Education (ISTE) Standards for Students (see Table 1).

The unit also incorporated the SAMR (Substitution, Augmentation, Modification, Redefinition) model developed by Dr. Ruben Puentedura to evaluate how technology may be integrated into teaching and learning. In his blog, *Ongoing thoughts on education and technology* (Puentedura, 2013), he describes at length how the SAMR model may be used in general education. In this instance, students used the SAMR model in the following ways in the music classroom:

- *Substitution* occurred when they notated their complementary rhythms into an app instead of using traditional writing implements like pen and paper.
- *Augmentation* occurred when they referred to and followed directions posted online to create their complementary rhythms.
- Video recording into the app directly illustrated the *modification* component. Uploading their work into their digital portfolio illustrated the *redefinition* component.

## Using Technology

Although Orff Schulwerk teachers rightly believe in their students being fully immersed in active music making, purposeful use of technology can optimize instructional time and data organization. Technology integration can provide students with significantly more time for exploring, improvising, and creating while providing teachers with a platform for organizing, grading, and storing student work in the form of PDFs and video recordings. Over time a digital portfolio can be maintained that tracks students' proficiency and growth. In an educational climate where teachers are asked to provide data that show evidence of student progress, technology becomes not only a meaningful and convenient tool to organize instruction, but also a powerful one that can be used to illustrate definitively the efficacy of the Schulwerk.

In many cases, students come into the classroom with considerable knowledge of technology. Games, simulations, social networking, communication, and almost instant accessibility to various kinds of information through handheld devices are but a few examples of their everyday use of technology. Utilizing this student knowledge, being selective of available technology in the form of devices and apps, and channeling the enthusiasm for technology into the Orff Schulwerk classroom can result in a truly innovative and effective form of teaching and learning.

Integrating technology in the Orff Schulwerk classroom can be challenging for teachers unfamiliar or uncomfortable with technology. It might not appeal to all. It is worthwhile to be curious, however, to explore possibilities and then make an informed decision on its applicability. We need look no further than Carl Orff himself as an example of a teacher with this growth mindset. Hermann Regner notes that Orff was filled with curiosity about teaching and learning. This awareness of the importance of teacher curiosity was reflected in his teaching. When the teaching at the Güntherschule is discussed, there is mention of a special readiness to learn and to be receptive to new ideas, about "a teacher overflowing with idea" (Kügler, 2013, p. 56). Would it not behoove us then as Orff Schulwerk teachers to be curious about the tremendous changes technology is bringing about in the field of education in general and our music education programs in particular, and to take and adapt what we need to our particular teaching situations?

A starting point for those willing to explore possibilities of technology integration would be to collaborate with other colleagues who are already doing so successfully. If students in the music program are already using devices or apps in their general education classes, exploring ways to use these in the music class will be well worthwhile.

With limited time in the schedule to deliver music content, most teachers would opt for learning through active music making instead of teaching the technology. If students already know how to navigate the technology, then this knowledge could be adapted for use in the music room without the teacher dedicating valuable time for technology instruction. Class time may be optimized and dedicated to music learning.

There is an app for everything, as the now clichéd saying goes. Table 2 illustrates an extremely small selection of general apps that could be used in the music classroom. These apps may be used across disciplines and subject areas, making it likely that many general education teachers are using them. Using common apps across disciplines and

subject areas provides students with some common platforms to access and organize their work. This is also cost effective for the school while allowing teachers and administrators to use common tools for technology integration.

### Visuals and Digital Manipulatives

Visuals have often been used as an integral part of instruction. Often material that appears on posters and flipcharts or was created on chalkboards and whiteboards can be transferred efficiently into presentation applications like PowerPoint, Keynote, Google Slides, and Prezi, to name a few. These apps have the advantage of existing in an electronic format that can be reused and revised often over a long period. Animation features within the apps can be used to present and practice concepts and skills. Many of these are used for whole class demonstrations before independent or small group work. This work can be recorded on paper or may be completed on devices. Using substitution from the SAMR model, the work may be done on a presentation app.

**Table 2.** General Apps that Can Be Used in the Music Classroom.

Multimedia Presentation	Word Processing and PDF Annotation	Note Taking	Drawing and Animation, Audio and Video Editing	Organization and Class Management	Link, Quick Response (QR) and Augmented Reality (AR)
Powerpoint, Keynote, Google Slides	Word, Pages, Google Doc	Evernote	DoodleBuddy	Google Classroom, Planbook, Teacher Kit	Qrstuff.com
Shadow Puppet Edu	GoodReader	Good Notes	Puppet Pals	Socrative	QR Code Generator
Smart Notebook, Activinspire	iAnnotate	Skitch	Stop Motion	Plickers	Qrafter
Doodlecast	Notability	PDF – Notes	Tellagami	Seesaw	Aurasma
Educreations	PDF expert		Chatterpix	Showbie	Thinglink
Explain Everything			Audacity, GarageBand	Class Dojo	
Haiku Deck			Quicktime	iDoceo	

SOURCE: COMPILED BY MANJU DURAIRAJ.

Vocal exploration, melodic contour, *sol-mi* tracking activities, setting up xylophones, and melodic and rhythmic flashcards (see Figure 1) can be used as formative or summative assessments, even as students explore these through movement, play, speech, and song (see Figure 2, p. 26). These manipulatives were created in SMART Notebook® and can be printed and laminated for use year after year. The worksheet activities, too, can be printed for use with classes, or may be sent to students' devices to be completed and uploaded into digital portfolios (Durairaj, 2014).

### Examples of Technology Integration

Most of the following activities showcase the application of the SAMR model in an Orff Schulwerk classroom. Hard copies of worksheets, writing or drawing utensils, and tactile manipulatives are replaced by comparable features within apps.

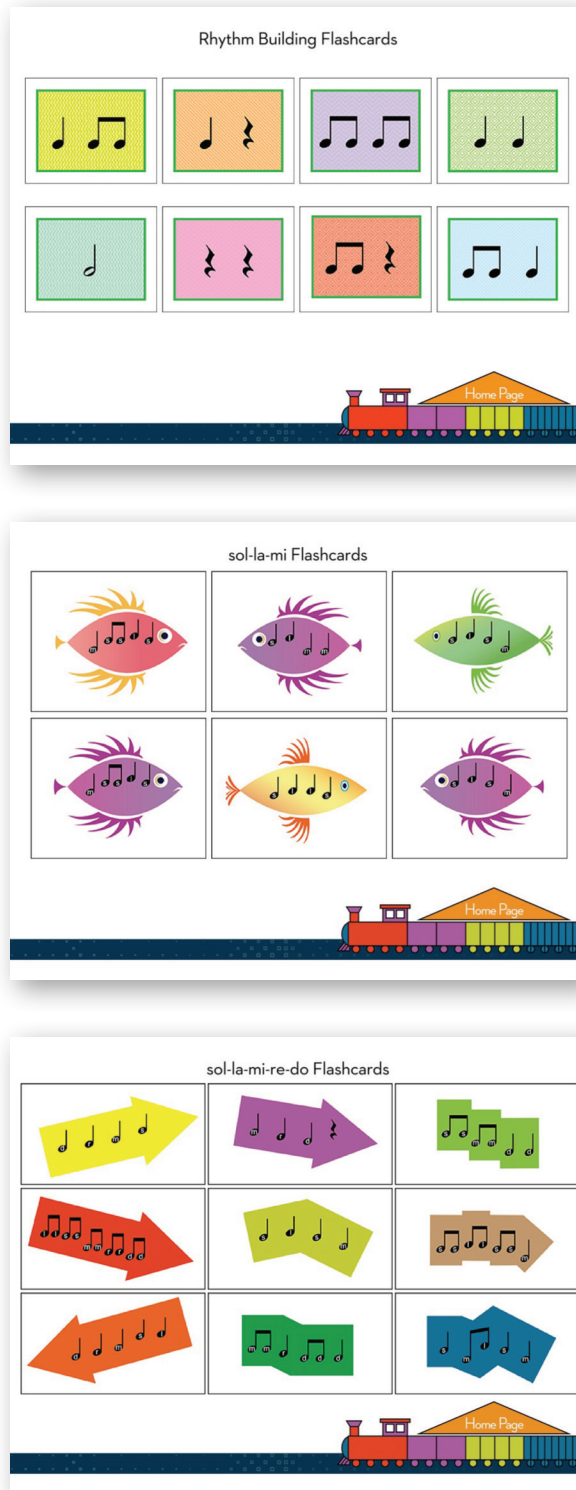
#### Graphic Notation

A graphic notation activity may be completed on devices using the app Educreations that is native to iOS devices. This activity is an effective assessment because it records students creating strokes to the beat. It may also be done in Seesaw or Explain Everything™. Students select two colors, one to indicate sounds with a beat and another to indicate sounds without. The music for this activity can be a pre-recorded sample with snippets of tunes interspersed with pauses, or you may choose to use a hand drum and wind chime instead of recorded music. Students tap the steady beat, creating strokes on the iPads in accompaniment to the drumming. On a pause, they choose another color and create a swirl to the wind chimes. They may press “record” right from the beginning of the activity to create a screencast. A screencast, also known as a video screen capture, is a digital video recording of all the actions taking place on a device’s screen. Students may then play back their work and see if their strokes kept time with the music. These screencasts can remain on the iPads or may be uploaded into the teacher account at [www.educreations.com](http://www.educreations.com).

#### Mallet Technique Rain Story

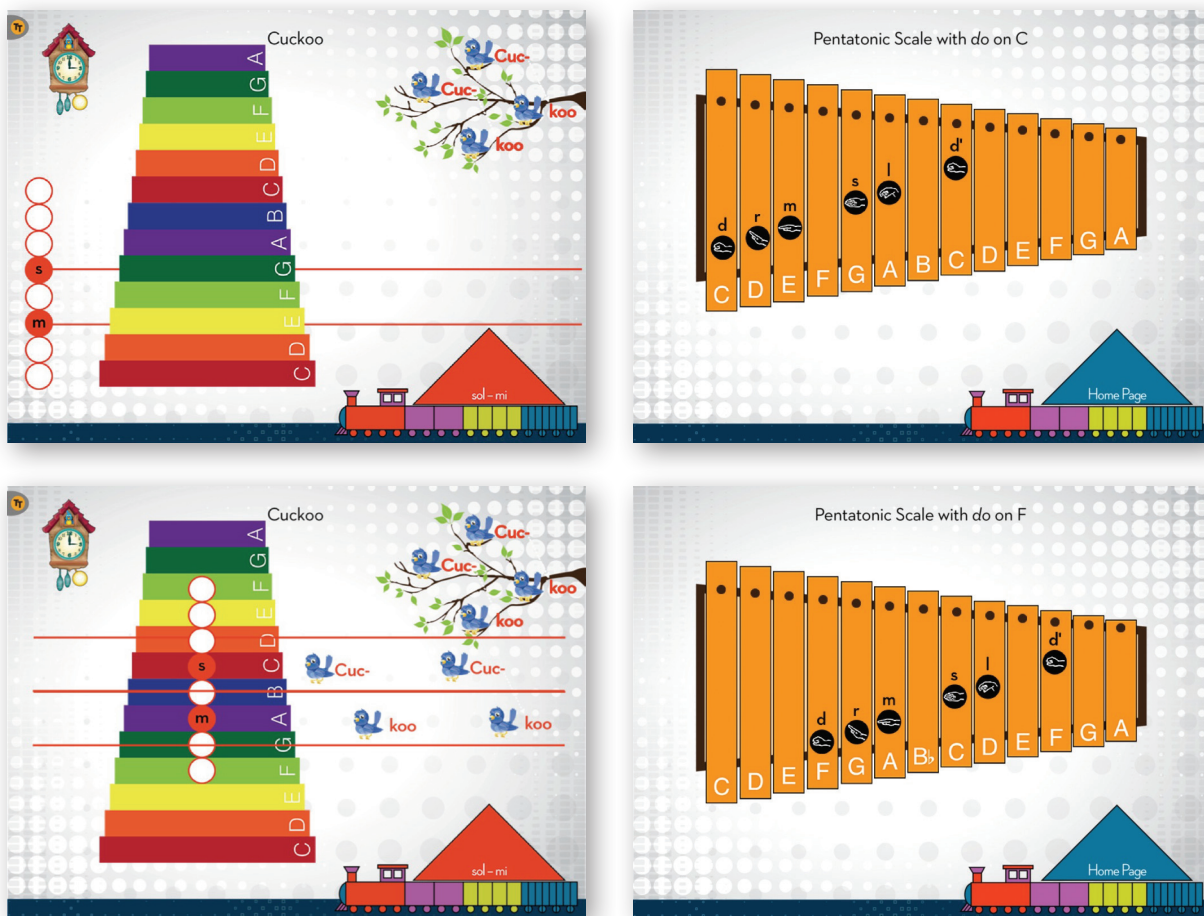
In this activity, students demonstrate their understanding of mallet technique and following their created graphic notation. They imitate the teacher in playing random tone clusters on barred instruments,

**Figure 1.** Melodic and Rhythmic Flashcards Created in SMART Notebook.



SOURCE: CREATED BY MANJU DURAIRAJ. FROM *INTERACT WITH MUSIC ASSESSMENT LEVEL 2*. © 2015 HAL LEONARD CORPORATION. USED WITH PERMISSION.

**Figure 2.** Manipulatives that Can Be Used as Formative or Summative Assessments.



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using both mallets bouncing gently off the bars, alternating mallets going up and down adjacent bars, and glissandi. An oral rain story describing a gentle drizzle (alternating mallets), heavier drops (mallets together), and the wind (glissandi) makes a good accompaniment. After drawing and demonstrating a rain picture on the Smartboard, the students play the class demo picture before creating their own rain story and recording themselves playing and following their drawing.

**Vocal Exploration and Rhythmic Creations**

There are many options for student vocal exploration and rhythmic creation. For example, students can record themselves drawing a pathway and dragging an object along it while vocalizing. Another option is to take rhythmic and/or melodic dictation and play the result on unpitched/pitched percussion in a premade worksheet.

**App Smashing**

App smashing is the term applied when multiple apps are used to create a project. The following activity, which was differentiated by student ability, involved the Explain Everything, GarageBand, and Seesaw apps. Students were given the choice to use one or more of them within a preset time frame. Some used laminated melodic flashcards they photographed and brought into Explain Everything, and then created a groove using Smart Drums in GarageBand, sang their composition using the Audio Recorder in GarageBand, and brought the sound file into Explain Everything. They also had the option of adding a “smart guitar” groove in C, F, or G over the drum groove, then singing and recording their composition into the audio recorder before pulling the sound file over their composition in Explain Everything. For added glitz, they used the laser pointer in Explain Everything to create a screencast.

Other students pulled in digital melodic flashcards or uploaded a premade worksheet to be completed in the Explain Everything app, then repeated the process in GarageBand to pull the sound file into Explain Everything.

## Conclusion

Many more examples of integrating technology in the music classroom are available, including those using technology for flipped or blended classroom models, recording and playing back student compositions, and working in small groups or pairs on creating and playing complementary rhythms to name a few.

In addition to being an excellent tool for music teachers, technology can facilitate curriculum continuity when a substitute teacher is needed. A PowerPoint presentation of the lesson sequence, a screencast showing interactive modeling or a

class demo in SMART Notebook, or a collaborative assignment set in Showbie or Seesaw can all help maintain curriculum consistency and flow when the classroom teacher is away.

One of the greatest advantages of technology is that it helps track and store data and makes it easily accessible. Apps like Seesaw allow national, state, and district standards along with benchmark skills to be accessed and tagged to an assessment or activity. They enable teachers who are required to demonstrate student proficiency and growth to have authentic data at hand and to provide evidence of progress as students traverse their programs. All this and more can be accomplished by starting with the first step of substitution, that is choosing some of the many manipulatives and devices lining the walls and floors of an Orff Schulwerk classroom and reinforcing them with digital media. ■

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# Harnessing the Cloud for Professional Collaboration and Audience Engagement

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**NATASHA THURMON** teaches kindergarten through Grade 5 music at Boldt Elementary School in San Antonio, Texas. She has successfully completed three levels of Orff Schulwerk teacher education. After apprenticing at Villanova University, Natasha now teaches recorder at Trinity University. She is a past president of Central Texas Orff and presently serves on AOSA's Website Subcommittee and as Social Media Subcommittee Chair. Natasha has presented at various state conferences and is currently pursuing a master's degree in music education at the University of Texas at San Antonio.

## ABSTRACT

*Cloud-based collaboration and data storage, online resources, QR codes, and digital publishing of audio/visual materials can promote an experience impossible to replicate in an entirely “live” setting. In this article, the author discusses the evolution of a process in which investing time and patience in the use of technology enhanced the sharing of student artistry and facilitated a model for future use.*

## By Natasha Thurmon

Collaboration is one of the most often heard “buzz words” in the current education landscape. Teachers are expected to collaborate with each other and teach our children how to do so as well. Professional development and planning time is regularly allotted for teachers to decide, as a community, how best to fulfill instructional goals. As music educators not fitting neatly into a grade-level cadre, or in some cases not being full-time staff, we are often overlooked in that process. Fortunately, today there is a place where teachers can meet, unencumbered by the limitations of time and even physical space, to plan and share and look for ways the arts can be fully integrated into our school’s curriculum. I am talking about “the Cloud.”

So what exactly is the Cloud? According to Griffith (2016), cloud computing in simplest terms means storing and accessing digital information over the Internet instead of on a hard drive. Because the Cloud is as vast and pervasive as the Internet, using it provides the ability to store large amounts of information and data that can be uploaded from varying devices at a whim.

Teachers can use a google account (like gmail) to create their own cloud account (Google Drive). In this account, folders can be set up to store documents, spreadsheets, presentation slides, music, video, and more. Finished working on a slide presentation for a lesson at home? Upload it to the Cloud, and you

can find it the next day from the computer at work. Planning an upcoming concert with the middle school director and need to work on the program together? The cloud allows you to do this, sometimes even at the same time, and make changes and edits in real time. It was the ability of the Cloud to make sharing information and knowledge easy and accessible that inspired a new idea at the school where I teach.

### The Idea

The art teacher and I were interested in creating a cross-curricular event to showcase connections between music and art. We envisioned multiple stations that included a gallery walk, hands-on art and music activities, and live student performances, as well as interactive web-based resources to present an event that would go beyond the displays to reveal to the audience our students' unfolding creative process. With so much to organize and only two of us, we soon realized we needed to come up with innovative solutions and an efficient collaborative process to bring our vision to fruition.

We began sharing our idea with colleagues and seeking their advice, and quickly discovered two things: First, technology was the likely answer to many of our logistical challenges; second, having an open mind was just as important to our journey. In our final presentation, though we used multiple types of technology, the shared ultimate purpose was to help us advocate for and communicate to

our visitors the importance of the arts and Orff Schulwerk.

### Getting Started

After conversations with technology support staff both on and off our campus, we settled on several pieces of hardware and software that would be useful for our event. iPads played a particularly important role. One feature of useful technology is the ability to work across platforms and integrate seamlessly. With campus iPads, the art teacher and I were able to take pictures of students working on their creations, video their progress, and upload the photo and video files to our Google Drive in one quick step. A traditional camera would have needed to be plugged in first, and the files then pulled from the device. Depending on specifics, this is a three- to six-step process. In addition to moving media, we could also use third-party apps on our iPads to edit our videos into seamless montages that showcased our students' process and growth.

We also needed a convenient way to make the recorded material available and accessible to families at the final event and decided on Quick Response (QR) codes. A QR code is like a snowflake. Each one is unique and differs from the others. With an app installed on a smartphone or tablet, the camera can capture a QR code and link directly to just about anything web-based: PDF files, music, video, pictures, and so on. After we decided on the media we wanted to share with families at the event, we set to work.

**Figure 1.** Student Dance Shapes Displayed in the Gym Like an Art Gallery.



PHOTOGRAPHER: DENISE AGUILAR. USED WITH PERMISSION.

## The Projects

Each grade level created music and/or artwork to share. Second-grade students had recently finished a week of informances in music class for their families, in which they performed a short arrangement on barred instruments and played their rhythmic ostinato pattern compositions on unpitched percussion. Their artwork and the story, *Please, Mr. Panda* by Steve Antony, inspired the performance. Videos recorded two students explaining the experience as well as reading through the story, and QR codes were generated to link to the videos.

Third-grade students worked in teams and listened to different genres of music in art class. They danced as they were inspired by the music, and one student froze into a body shape when the music stopped. The remaining children traced the shape on a piece of butcher paper and then filled in the body shape and negative space around it (see Figure 1, p. 29). Two QR codes were generated for their artwork: One linked to a short clip of the music that served as their inspiration, and the other linked to a YouTube video of the children describing how they created their piece.

Fourth-grade students made Native-American-inspired dreamcatchers in art class. In music class, several samples inspired small group work. Students

used varying features of the art (number of beads, length of lines, number of string intersections) to develop short recorder compositions (see Figure 2). The dreamcatchers also inspired a movement piece they performed at the end of the evening event. QR codes linked to videos documenting the composition process were then generated.

Fifth-grade students watched a video of music-inspired artist Jonas Gerard and used similar ideas to design their own artwork. Several pieces were chosen, and then in music class student groups combined speech pieces with percussion and movement based on the artwork. Classes performed their pieces live at the event, and the artwork was showcased on another type of technology, an Activ Panel (a giant interactive TV screen). QR codes linked to videos documenting the composition process and a final performance of each piece.

## Putting It All Together

With the student projects and technology choices complete, the next step was to “park” and save all of the content in a convenient final location. We needed everything to be where we could access codes and work collaboratively on digital media. This is where the power of the Cloud was essential. The amount of data created for this event was quite

**Figure 2.** Fourth Graders Develop Their Dream Catcher Compositions.



PHOTOGRAPHER: NATASHA THURMON. USED WITH PERMISSION.

large. In addition, multiple people needed access to it at any given moment. Without the Cloud, one person would have to take charge of all the information and find a place to save it, likely on a flash drive that people shared. If two people needed the information at the same time, however, a single flash drive would not suffice. With our Google Cloud accounts, we could easily access all the media and upload more. Each of us developed content with our students and organized it for varying needs. For example, I generated the QR codes for all the media, while another teacher pulled images for a website that advertised the event and also created a Google survey for families to RSVP.

In addition to storing large amounts of data and collaborating in the Cloud, we uploaded the videos to an unpublished YouTube playlist (“unpublished” means the videos are not accessible to the general public, but can be accessed by anyone given a direct link). The URLs for the videos were also linked to QR codes, and the codes were saved in a single Google Docs file with labels under each code so we would not confuse the dozens of codes, but could still access them easily. We hung printouts of the QR codes throughout the school, next to the specific artwork each represented (see Figure 3). By using QR readers on their smartphones or tablets to access the digital media, families could see the student artwork and the process behind it.

More important than all the technology mentioned, however, was the group of people involved. The support of the talented technology staff ensured our plans went as intended. Our campus computer instructor, who works with every class on basic computer skills, gave us practical advice and helpful ideas. Our academic technology coach played an integral part in the process by recommending different products to use and how to make them work well together. She also procured the Activ Panel for us to use in the final performance. While parents watched their students perform a live piece inspired by artwork, we were able to show an image of the original artwork blown up large enough for the entire audience to see.

### The Future

Technology is constantly changing. A cutting-edge device or application we find indispensable today may be completely obsolete in just a few short months, evolving into something unrecognizable yet

**Figure 3.** A Student and His Mother Scan a QR Code Using Her Phone to Learn About the Artwork Displayed.



PHOTOGRAPHER: DENISE AGUILAR. USED WITH PERMISSION.

significantly better. This is the nature of technology. To use this constant evolution as an excuse never to try any of it, however, is a missed opportunity. Every attempt we make, whether successful or not, is a valuable experience that helps us prepare for and take advantage of “the next big thing.”

We learn technology most effectively through the same Orff Schulwerk approach we use with our students—imitation, exploration, and improvisation. First, we observe someone else using a new innovation and imitate their behavior—with some errors along the way. Then we explore. We click around and see what happens when we tap that symbol or that arrow. “Oops, what did I just press? Where is the back button?” Finally, we branch out and try different combinations of software in conjunction with student learning to produce a satisfying and meaningful product that celebrates authentic musical expression. It did not work out the first time? Go back and refine it—just as we ask our students to do.

## Conclusion

A combination of technology resources, including cloud computing, QR codes, iPads, and apps, enabled us to produce a cross-curricular evening event that reached out to our community in multiple ways. Families experienced the beautiful art and music

their children had designed and composed, as well as the creative process behind it all. Although the specific technology may be different next year, the process provides an enduring model we can follow to take advantage of the evolving advancements and possibilities as we embark on future projects. ■

Links to Some of the Many Available Technology Resources.

Links	Features
<a href="http://vocaroo.com/">http://vocaroo.com/</a>	Vocaroo is a website that makes sharing voice recordings very simple. Various sound files can also be uploaded and quickly shared with others via multiple formats, including a QR code that can be directly generated by the site.
<a href="https://www.google.com/drive/">https://www.google.com/drive/</a>	Google provides an introduction to its drive service, explaining how it can be used to store and manage many different kinds of information.
<a href="https://www.weebly.com/">https://www.weebly.com/</a>	Weebly is one of many website builders with a user-friendly interface and pre-made templates that can be easily edited.
<a href="http://www.qr-code-generator.com/">http://www.qr-code-generator.com/</a>	Create QR codes that link to different kinds of online content, such as websites, PDFs, MP3 files, and more.
<a href="https://itunes.apple.com/us/app/lj-create-qr-scanner/id951009180?mt=8">https://itunes.apple.com/us/app/lj-create-qr-scanner/id951009180?mt=8</a>	In order to link to QR codes, a scanner app is required. Many exist; free ones often include ads.

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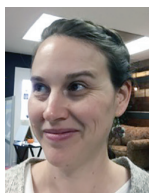
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# Enhancing the Instrumentarium: Contemporary Instrument Makers and Their Digital Tools

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**RYAN BLEDSOE** is a music educator who has worked with infants through college students in Florida, Arizona, and Texas. She has successfully completed three levels of Orff Schulwerk teacher education, and as a doctoral student in music education at Arizona State University, she researches and writes about creativity, music technology, and music making. Ryan is the founder of the Duo Musical Playground, which offers play-based music classes using interactive technology to children and caregivers in North Texas.

## ABSTRACT

*What can educators and the children they work with create with digital tools while accommodating Orff's priorities of accessibility and quality? In this article, the author shares examples of four people who create instruments using digital technology. She also discusses ways educators might better understand the influential role digital tools can have in an Orff-centered classroom.*

### By Ryan Bledsoe

Carl Orff once stated, “We all know from experience that wildflowers thrive in abundance while carefully tended garden flowers disappoint us sometimes; they lack the strength of natural growth” (Orff & Walter, 1963, p. 69). The Schulwerk is often compared to a wildflower: Both can find suitable conditions for success and nourishment without a preconceived plan. This natural approach embraces making music with the tools at our disposal. Over time, these tools change as we develop newer technologies to express ourselves in daily life. As they have for the past 100 years, musicians today use electronic tools to make music in various ways that imitate how we use acoustic instruments and push us to use acoustic instruments differently.

### Orff's Priorities for the Xylophone in the Schulwerk

One of the goals of the Güenterschule was to make adult-led musical learning more natural for children. Two aspects Carl Orff focused on to achieve this were (1) emphasizing rhythm over harmony, and (2) finding instruments accessible to students for playing and improvisation (Orff, 1977; Orff & Walter, 1963).

Orff's priorities when assembling what we know today as the “Orff instruments” connect to his vision for what children would do with those instruments:

... I encouraged the activation of the students by the playing of their own music, that is through improvising and composing it themselves. I therefore did not want to train them on highly developed art instruments, but rather on instruments that were preferably rhythmic, comparatively easy to learn, primitive and unsophisticated. (Orff, 1977, p. 4)

Even though Orff categorized these instruments as primitive and unsophisticated, the xylophones and metallophones he created with Karl Maendler are not lacking in sonic quality. Creating an instrument accessible to all was essential. Children could then create original works through play and improvisation without mastering a difficult instrument or musical tradition (Thresher, 1964). In today's elementary music classrooms, we are fortunate to have many tools at our disposal beyond the xylophone. What can we and the children we work with create with digital tools based on Orff's priorities of instruments with low barriers for child engagement and high sonic quality for the purpose of child self-expression through sound?

### Digital Instruments in the *Schulwerk*

The question posed reminds us that anyone can make and adapt digital instruments. We can take the "maker" one step further as students and educators become not just music makers, but instrument makers as well. In the contemporary maker and do-it-yourself (DIY) movements, anyone with access to the right tools and knowledge can design a musical instrument that meets their own specifications (Dougherty, 2016).

Following are examples of four people who, using digital technology, create instruments for young people. These instrument makers have a common interest in how people interact with instruments to make sounds. Orff understood that music and movement are interrelated and that both should be part of music education. Using contemporary digital technologies, these instrument makers explore movement in a way more closely connected with sound-making, rather than movement inspired by sound.

#### ***Eric Rosenbaum***

Eric Rosenbaum is a trombonist, graduate of the MIT Media Lab, and co-creator of the *Makey Makey*.

The *Makey Makey* (<http://makeymakey.com/>) is a digital controller that easily attaches to a computer using detachable wires and requires no computer programming; it was designed specifically for tinkerability, which is "characterized by a playful, exploratory, iterative style of engaging with a problem or project" (Resnick & Rosenbaum, 2013, p. 164). Although this device can be used for many activities, Eric and thousands of people have used the *Makey Makey* to create "pianos" out of bananas, staircases, buckets of water, and many other things. A computer recognizes the *Makey Makey* as a computer keyboard and allows the user to make any conductive material a key for the computer: hence the name's unique combination of make and key. In the music classroom, the *Makey Makey* is a valuable and simple tool children can use to interact with sound and create music.

Due to the *Makey Makey*'s tinkerability, those making instruments with it can choose how their instruments sound (using a computer) and how they look. Additionally, they choose how their movements will affect those sounds. Two children can control sounds with a *Makey Makey* by touching their hands together or through touching points in a room during a creative movement activity. A large piece of aluminum foil on the ground becomes a button that children control with their feet with a *Makey Makey*. Digital tools such as the *Makey Makey* allow teachers and children to determine how they will use their bodies to interact with sounds.

#### ***Ellie and Ray***

Ellie and Ray (pseudonyms for two students from a school where I currently teach) explored the possibilities of designing digital instruments in their school music technology course. They were asked to determine how they would use their bodies to interact with their instruments as part of the design process.

Ellie, age 8, made a felt "piano" featuring a piece of felt with foil "keys" on it that, when pressed, play an electronic note (see Figures 1 and 2, p. 36). Ellie decided to make her felt piano with eight star-shaped keys arranged in two small arcs to fit her hands, which she plays with one finger on each key. These foil keys on Ellie's felt piano connect to a small digital device called the *Arduino LilyPad* via conductive threads. The *LilyPad* connects to the snaps at the top of her piano where she drew

**Figure 1.** Ellie With Her Felt Piano. The Arduino Lily Pad Is Not Shown.



PHOTOGRAPHER: RYAN BLEDSOE. USED WITH PERMISSION.

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a heart. The center of the small flower to the left of that heart is the speaker, which is also snapped onto her piano. The dotted lines are her conductive thread stitches. The stars are her foil keys. When Ellie touches one of the keys, an electronic signal is sent to the LilyPad and a pitch is played out of the speaker on her felt piano.

The use of conductive threads rather than wires is well suited for children; Ellie stitched the traces from her keys to the LilyPad herself, which made her project look tidier than other electronic projects that use wires. Once four of her keys were connected, she played four notes pre-programmed into the LilyPad and recognized them as *do*, *mi*, *so*, *do*'. She played the first part of Haydn's *Surprise Symphony*, although she wished she had all the notes to complete the song. Nevertheless, Ellie continued to play the song, tapping the spaces between her keys when she needed a *fa* or *re*. After another three classes, Ellie finished connecting all eight keys to the LilyPad. She then played previously learned melodies like *Twinkle Twinkle Little Star*, created her own songs, explored the possibilities of her instrument, and reprogrammed the LilyPad with all of the necessary pitches to play the *Surprise Symphony*.

**Figure 2.** Ellie Sewing With Conductive Thread from the Snaps to Her Star-Shaped Keys.



PHOTOGRAPHER: RYAN BLEDSOE. USED WITH PERMISSION.

Ray, age 17, designed and made his own musical instrument digital interface (MIDI) controller using a device called the Teensy. A MIDI controller is an electronic device, typically a piano keyboard or drum-like pad, for performing music on a computer. Initially, Ray used eight arcade buttons that he

mounted on a small box. After he realized he could not play an entire octave with only eight notes, he redesigned his MIDI controller to have 12 arcade buttons and pitches. Ray was thoughtful about the physical design of the second box. Note the resemblance to a piano keyboard and the ergonomic placement of the buttons (see Figure 3). The left hand plays chromatically from C to F and the right hand plays from F# to C. As shown in Figure 4, the green arcade buttons each attach to the breadboard (off-white plastic object) with two wires. The Teensy, a programmable device that sends information to a computer, is the small chip on the right side of the breadboard.

As Ray designed his MIDI controller, he used a piano keyboard as a guide for how he would place his buttons. Ray is not one who enjoys attracting attention to himself through large movements. Another young person given a similar task might choose to make a MIDI controller with buttons more spread out, perhaps too far apart to control with one finger on each button. The importance of Ray's experience as an instrument maker lies in his freedom of choice to design the instrument that makes the most sense to him. Once Ray finished constructing his instrument, he attached it to his computer, opened his favorite music software program, and created his own music.

### Jon Stapleton

Jon Stapleton designed and built a MIDI controller called *Mosaic* while working on his bachelor's degree in music education. "*Mosaic* is made up of tiles, each of which perform a discrete, simple task. Together, they allow the user(s) to create the MIDI controller that they need—in this case, a collaborative performance tool" (Stapleton, 2015). The children Jon worked with as a student teacher used the tiles he designed to connect with his computer (see Figure 5, p. 38). A child may choose a tile with various combinations of buttons, sliders, knobs, motion sensors, and more. The tiles connect to a larger box in the center and can be reorganized by users (see Figure 6, p. 38). *Mosaic* alone does not generate sounds but when connected to a computer, it is recognized as a MIDI controller similar to a keyboard or trigger pad.

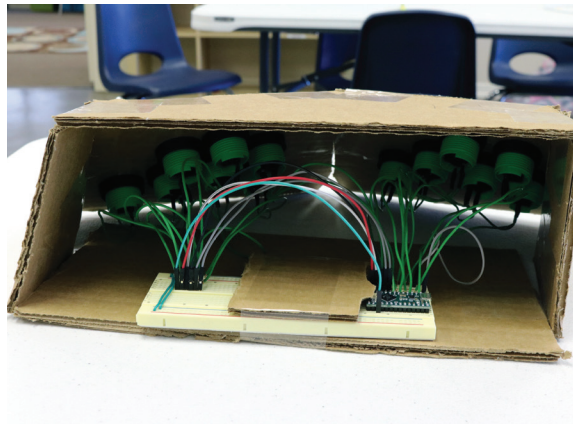
An interesting musical possibility Jon sees with adaptive instruments such as *Mosaic* is that three points of manipulation exist: the controller, the

Figure 3. Ray's MIDI Controller.



PHOTOGRAPHER: RYAN BLEDSOE.

Figure 4. View from the Back of Ray's MIDI Controller.



PHOTOGRAPHER: RYAN BLEDSOE.

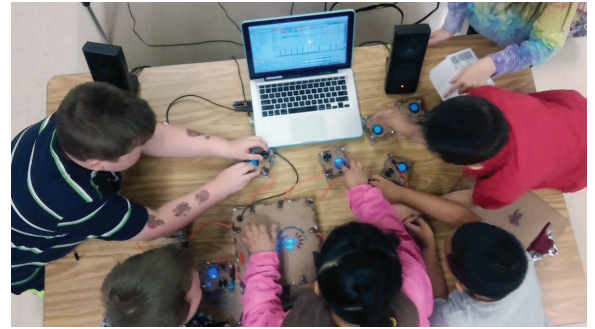
computer software, and the way a person interacts with the controller and software. People can make changes to any one of these three points to customize their music-making or music-learning experiences. Jon's idea of the three points of manipulations relates to the aforementioned freedom that instrument makers have when using the Makey Makey. The Makey Makey, however, allows the user to create only buttons or keys that are either on or off. *Mosaic* differs in that it includes many tiles, each inviting children to choose how they interact with the instrument to make sounds through the computer: *pushing* a button, *turning* a knob, *sliding* a slider, *moving* their entire bodies. These tiles allow more than just on and off controls. Children can use a tile to change the volume or timbre of a sound or to play a glissando. The motion sensor tile

provides an exciting way for them to interact with sound, allowing the use of the entire body without the need to touch anything. Imagine a shadow screen that senses motion to control sounds. In this case, movements are not inspired by music; rather, movements *create* music.

### **Ryan Bledsoe**

One interest of mine is how children can physically interact with sounds using their bodies in a way that makes sense to them. My research led me to the ideas of Friedrich Froebel, the father of the kindergarten, and Seymour Papert, the developer of a children's computer programming language in the 1960s. Froebel believed that learning occurred when children were given objects to play with that made sense to them (Froebel, 1896). He developed a series of gifts that mothers and other caretakers in the 1800s were to use with children, beginning with the yarn ball during infancy. Froebel found that even very young children could hold a ball, roll a ball, throw a ball, and so on. As children interact with the ball and their caretakers, they experience shape, color, gravity, and other qualities in natural and playful ways. Papert coined the term object-to-

**Figure 5.** Students Interacting With Mosaic Tiles.



PHOTOGRAPHER: JON STAPLETON. USED WITH PERMISSION.

think-with in the 20th century when he created a robotic turtle that children could program using a computer (Papert, 1993). He found that having an actual object to instruct in the physical world made the abstract concepts associated with computer programming more concrete for young children.

My current project is to design a digital musical instrument with children that connects the simplicity of Froebel's gifts with the concreteness of Papert's objects-to-think-with, *without* needing to be physically connected to a computer. This work-in-progress is a small digital device to record sounds

**Figure 6.** Mosaic Tiles With Buttons, Knobs, Sliders, and Other Controls.



PHOTOGRAPHER: JON STAPLETON. USED WITH PERMISSION.

that can be embedded into any child-friendly object, such as a ball or stuffed animal. When the sounds are played back, a child will be able to manipulate them through body movements. Imagine a ball embedded with C and G—a child could play a broken bordun by tossing the ball from one hand to the next. Or imagine another child who wants to play a broken bordun but struggles to catch the ball with the beat. This child can instead choose to play the bordun by tapping the ball lightly for C and more forcefully for G. These examples are not meant to be ends in themselves, but are to suggest that this device will be adaptable for the user.

### Becoming Instrument Makers

Although these examples happen to be digital, we can realize the underlying priorities taken from Orff—accessibility and quality—by using any tools or materials. When Orff developed his instrumentarium, he was influenced by the music and the instruments used at that time: “Purely rhythmic instruments, both indigenous and exotic, were available in plenty through the development of jazz; one had only to make some kind of selection” (Orff, 1977, p. 4). When we view ourselves and the young people we work with as not just music makers, but instrument makers as well, we can better understand the influential role digital tools can have in an Orff-centered classroom.

As music educators, we can engage in the natural addition of electronic tools in our instrumentariums by creating them ourselves or by encouraging the young people we work with to make their own. This exploration of digital additions may begin with, for example, a Makey Makey where young people design their own pentatonic “keys” to use in an Orff arrangement. When electronic materials are not available, educators may address instrument design by adapting existing instruments. Similar to the way John Cage and other composers established the concept of prepared piano, young people can create prepared Orff instruments using school supplies and other objects. I have seen children alter timbre through attaching popsicle sticks to the bars of a xylophone with rubber bands and placing paper between a contrabass bar and the tone hole. Such experimentation encourages curiosity in timbre and embraces the idea that the instruments we use are not fixed objects.

### Conclusion

Today we have flexible tools available to help us *all* be instrument makers. We can continue to cultivate musical learning naturally, as Orff encouraged years ago, through implementing student- and educator-designed instruments. Introducing digital tools into your well-established approach allows children, like wildflowers, to flourish in natural, playful, and self-expressive music classrooms. ■

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# Flip Books at an Exhibition: Integrating Animation and Orff Schulwerk

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**JAMES HARDING** teaches music to children ages 3-14 at the San Francisco School, where he and colleagues Doug Goodkin and Sofía López-Ibor helped create an internationally recognized, Orff-Schulwerk-based music program. James has taught workshops nationally and internationally and has been a guest teacher at the Orff Institute in Salzburg, Austria. He is the author of *From Wobbleton to Wobbleton*, a collection of music lesson ideas with the theme of creative play, published in 2013 by Pentatonic Press.

## ABSTRACT

*Digital imaging technology allows filmmaking and editing to be done in a much shorter time frame, giving teachers the opportunity to produce animation in the classroom. In this article, the author shares the process he has developed through the years using animation, technology, and the Orff approach to create moving pictures out of music and music out of moving pictures.*

## By James Harding

*“Out of music, movement; out of movement, music.” —Dorothee Günther*

*“Animation is not the art of drawings that move but the art of movements that are drawn.” —Norman McClaren, Canadian animator*

In an article in *The Orff Echo*, I noted the coincidence of Carl Orff’s being born in 1895, the same year the Lumière Brothers invented the movie camera (Harding, 2006). Although to my knowledge Orff never composed music for film, his artistic and pedagogical work at the intersection of movement and sound renders Orff Schulwerk a music education approach ideally suited for making connections between music and the moving picture. For the past decade I have been exploring projects where the art form of film “cuts in” to the dance between music and movement that is at the heart of the Orff Schulwerk.

Part of what has made this possible is the extraordinary development of digital imaging technology that allows filmmaking and editing to be done within a school time frame and even in an individual class period. Until recently, filmmaking had no chance of joining the easy back-and-forth of music and dance in the creative classroom because it was encumbered with clunky machinery

**Figure 1.** Melodic Material for Composition: The First Phrase of Moussorgsky's *Promenade Theme*.



SOURCE: NOTATION BY JAMES HARDING.

and time-intensive processes. Animation, an art form legendary for its need for time (thousands of drawings to create one minute of movement), has now become a viable activity in the music classroom.

### Out of Movement, Music: Flip Books at an Exhibition

My very first adventure with animation in the music classroom came in the fall of 2003. A collection of animated flip books at the front counter of a bookstore in Point Reyes, California caught my eye. Flipping the pages, I saw sand snakes undulating across the desert floor, space aliens emerging from a flying saucer with a banner saying “Happy Birthday,” sculptures of Degas dancers pirouetting off their pedestals, a Tyrannosaurus rex skeleton coming menacingly back to life. My Orff-Schulwerk-trained mind started thinking about the elemental music potential of these delightful little gift items. Here were short episodes of movement I could play forward and backward in my hands, no electricity required! Eventually—and happily for the customers behind me in line—I snapped out of my reverie and bought a bunch of flip books.

The Grade 7 music curriculum at the San Francisco School focuses on classical music and composition, and we look for repertoire that adapts well to the Orff ensemble and shows potential to inspire creative work from students. While preparing to introduce *Pictures at an Exhibition* by Moussorgsky, it occurred to me the flip books would make an ideal substitute for the paintings that inspired the original episodes in this work.

For exploration number one, the flip books were placed around the classroom on music stands, and students were invited to move through the space as if they were in a gallery, checking out the books while they listened to Mussorgsky’s theme played on the piano. They then chose one flip book to represent with movement. Groups formed naturally around particular flip books and worked quickly to create movement representations of the books they had chosen. After performing these movement skits for

each other, connected in a rondo form by Mussorgsky’s promenade theme played on recorder, we proceeded to the Orff instruments to begin learning the melody.

In the next class period, students went back to the book they had chosen to act out, and this time they were asked to compose a short musical piece inspired by the flip book. They were encouraged to incorporate some motifs from Mussorgsky’s promenade theme into their compositions, just as he had done in many of the painting episodes in *Pictures at an Exhibition*. The compositions that resulted from this challenge ranged from simple to ambitious, but everyone found a way to use motifs from the theme to support their animation soundtrack (see Figure 1).


This short sharing via technology caught the attention of many parents who had not yet grasped the importance of creative work in our music program.

For the flip book entitled *I Love You*, a team of two students played with the first three notes of the theme to create music to accompany the two characters running (see Figure 2, p. 42). They used transposition to distinguish the two characters. Finally, a sound effect (slide whistle) punctuated the man falling into the hole. For the flip book *Balloon* (Video clip, *Flipbook2015Balloon*), a team of three created a rising figure to represent the inflating balloon, getting higher and higher on the bass xylophone. This group used Mussorgsky’s second motif, played high on a soprano glockenspiel, to show the popping of the balloon (see Figure 3, p. 42).

The flip books worked quite well as inspiration for composing. The movement in the books inspired expressive uses of pitch, timbre, tempo, and dynamic in students’ compositions, and the material from the promenade theme gave all groups a melodic starting place.


As charming and inventive as these compositions were, it was obvious they would be more interesting

**Figure 2.** Example of a Student Composition to Accompany a Flip Book.



Action: Man running left      Action: Woman running right      Action: Man falls into hole

Sop. Xyl.



Slide whistle

SOURCE: NOTATION BY JAMES HARDING.

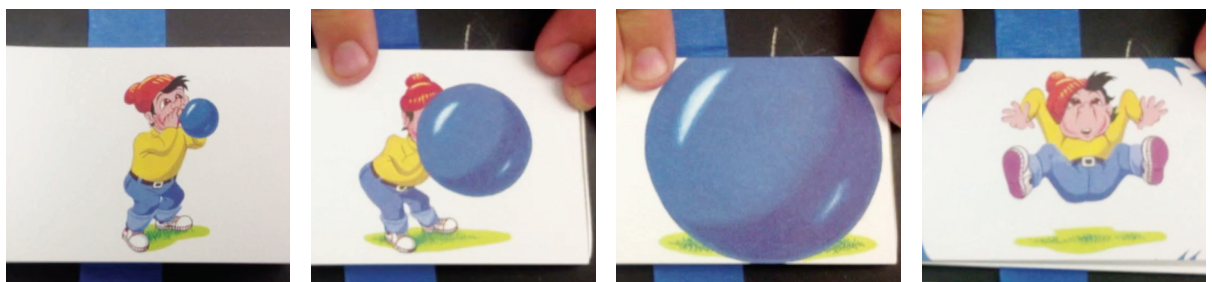
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to listen to if accompanied by the visual material that had inspired them. This is where tech came into the project. With a digital camera (and the help of a generous and patient friend) I took pictures of each of the pages of the flip books. Putting these stills and digital sound recordings into an early version of iMovie, we were able to create animated sequences to accompany students' compositions. Sometimes this involved slowing down or speeding up the visual material or looping it, and the iMovie program made all of this possible. Students participated in the editing process. Additional material, such as short videos of their hands flipping the books, was added.

Finally all the material was burned onto a DVD.


At Middle School Portfolio Day, an event where parents come on campus to view student work in all classes, "Flip Books at an Exhibition" was running on a school computer and kids were able to show their parents their compositions by clicking on them (see Figure 4, p. 43). This was a new frontier for me as a performing arts teacher, a way to have students share their classroom musical work outside of a concert. This short sharing via technology caught the attention of many parents who had not yet grasped the importance of creative work in our music program.

**Figure 3.** Another Example of a Student Composition to Accompany a Flip Book.



Balloon small      Balloon bigger      Balloon biggest      Pop!

Bass xyl.



15<sup>ma</sup> ----- |  
sop glock

SOURCE: NOTATION BY JAMES HARDING. ILLUSTRATIONS AND ANIMATION BY TONY GUY, *FLICK BOOK*. PUBLISHED AND DISTRIBUTED BY TOBAR, LTD., NORFOLK, ENGLAND. USED WITH PERMISSION.

Figure 4. Flip Book Covers Displayed as a Gallery on a DVD Menu.



PHOTOGRAPHER: JAMES HARDING.

I revisited this project in 2015 with a few changes. This time the students took their own pictures of the flip books (less work for me!) and the finished films were projected large on a screen above the stage at the seventh-grade spring concert. The flip book films served as transitional entertainment between students' live music and movement performances, and *Pictures at an Exhibition* became the theme for the entire concert. Both in the earlier DVD presentation and in this concert version, the technology showcased students' compositional thinking for an audience, in particular their ingenuity in creating a piece of music inspired by a moving image.

### Out of Music, Movement: Students Animating to Sound

The majority of my projects with animation have started from music, then collaboration with students to create moving pictures that accompany, emphasize, and illustrate the sound. In this work, we join a long lineage of animators who have choreographed images to accompany pieces of music. Disney's output alone stretches from the earliest days of the film soundtrack, from the 1929 *Skeleton Dance*—Carl Stalling's musical tribute to *Danse Macabre*—to feature-

length musicals like *Moana*, produced in 2016. *Fantasia*, produced in 1940, made history as the first feature-length animated symphonic concert, and those images still come to mind whenever I hear *Night on Bald Mountain* or *The Sorcerer's Apprentice*. The gorgeous mapping of Stravinsky's *Rite of Spring* to the early history of our planet with exploding volcanoes, rushing floods, and primordial beings multiplying and evolving is an abiding inspiration, the thrilling music supporting every movement on screen so naturally it seems composed for the film.

### Animation Software

These days a variety of animation apps are available. In the Apple environment, I have had good success with Boinx Software's iStopMotion. Some of the features that make this software particularly useful for animation projects include:

- Instant playback – Instead of taking many still pictures and then waiting to insert them into an editing program like iMovie, it is convenient to push a button and see the images as an animation right away. This is an especially good feature when working with groups of impatient students!

- Soundtrack – The ability to work with a soundtrack directly in the animation app and hear how the animation syncs with the sound throughout the production process saves time.
- Ghost framing, AKA “onion skin” – This feature shows a ghost image of the last picture taken, allowing the object to be moved in a smooth way for the next shot. This feature is also useful when work on an animation must be resumed on another day or class period.

### Two Approaches to Animating to Music

Two approaches have helped me animate imagery precisely to the rhythm and tempo of a piece of music. The first I call “trimming the fit,” a process akin to making custom alterations to a garment. Within a program such as iMovie or iStopMotion, it is possible to lay in the soundtrack and then adjust the animated frames by lengthening or shortening or duplicating or deleting until the timing works out. This can take quite a bit of effort, and usually requires extracurricular time fine tuning students’ work.

A more student-friendly approach, but one that presents other challenges, is “frame score.” By knowing the tempo of the musical performance, it is possible in a program like iStopMotion to set the frame rate (number of frames per second), and then count frames per beat as you animate. A useful equation is:

- $1 \text{ Beat} = 60 \text{ (frame rate/metronome mark) frames}$
- If the metronome marking is 120 (beats per minute) and the frame rate is 8 frames per second, then 1 beat (quarter note) will require 4 frames of animation. This is convenient in duple meter, because then an eighth note will be 2 frames, a sixteenth note 1 frame, and a dotted eighth will be 3 frames.

If you want to find a frame rate that will get you 4 frames per beat for any tempo, the equation is:

- $\text{Frame rate} = 4 \text{ (metronome mark)}/60 \text{ frames per second}$
- So, for a metronome marking of 105 (beats per minute), you would need a frame rate of 7 frames per second to have 1 beat = 4 frames.

If your eyes just glazed over from the math, it will be easier to understand as applied to a project with kids, such as the following in which we animated a folk dance.

### Animating a Slovakian Dance

Animation reinforced the rhythmic understanding of a Slovakian dance melody in a recorder unit for sixth graders (see Figure 5). Instead of developing individual segments, the class worked together for this project, with some students volunteering to choreograph phrases of the dance. An iPad with the iStopMotion app was pointed at a piece of green fabric on a desk. Slovakian dolls and some cute miniature sheep were brought to life using stop motion, an old animation process in which objects or materials, often clay, are moved a tiny bit for each individual frame of film or video. Calculating the tempo at 120, I set the frame rate on the program to eight frames/second—each quarter note was worth four frames. We connected the iPad to a projector, and everyone in the room could see the results of the animation in real time.

The teaching process went something like this:

Teacher: “What do you want to happen in the first phrase?”

First choreographer: “I want the dolls in two lines facing partners. On the first phrase, the dolls go in, peek right around their partner, peek left, then go back to their spots.”

Teacher: “Going in will take 4 eighth notes, or two beats—how many frames?”

Class: “Eight frames.”

Teacher: “The peeking is a dotted quarter—how many frames?”

Class: “Six frames.”

**Figure 5.** Sixth-Grade Students Animate Slovakian Dolls to a Folk Dance Melody.



PHOTOGRAPHER: JAMES HARDING. USED WITH PERMISSION.

**Figure 6.** Traditional Score and Frame Score for Slovakian Melody.



Frame Rate = 8 Frames/Second Metronome marking = 120 beats/minute

G	A	B	C	D	B	D	C	B	A	G	(rest)
2	2	2	2	6	2	6	2	4	4	4	4

G	A	B	C	D	B	D	C	B	A	G	(rest)
2	2	2	2	6	2	6	2	4	4	4	4

B	B	A	A	D	D	C	B	B	A	A	D	D	C
2	2	2	2	2	2	4	2	2	2	2	2	2	4

B	A	G	(rest)
4	4	4	4

SOURCE: NOTATION BY JAMES HARDING.

As we played back the animated dance of the dolls, students got to practice singing and playing the melody to make sure it matched the animation accurately. This process enabled them to assimilate the topic of note values in a very concrete way. The animation was an engaging medium for sixth graders with some experience in folk dance to explore the elements of choreography, a bird's-eye view of the spatial patterns they had already moved as dancers in our Orff program. The materials, dolls in traditional Slovakian folk-dance attire and sheep, gave cultural context to the melody they were learning (see Figure 6).

### From Animation to Presentation

The Slovakian folk dance choreography project demonstrates a practical use of animation as part of musical learning, and it serves as a good introduction to the calculations involved in animating to music with a stop-time application and a frame score. Other animation projects have led to presentation where the resulting imagery, projected large on a screen, accompanied a live musical performance in a concert. In my seventh-grade concerts, original animation has appeared accompanying arrangements of classical repertoire for Orff ensemble, scissors dancing to

the theme of *Swan Lake* (Video clip, *After Hours*), torn paper ballerinas doing plies for *The Dance of the Sugarplum Fairies* (Video clip, *Sugarplum/007*), and animated shadow puppets leaping to the theme of Stravinsky's *Petrouchka* (Video clip, *Petrouchka Animation*). In a recent project for our school's performance at the AOSA National Conference in San Diego in 2015, animations of flames flickered in the background while shadows of student dancers crossed the screen, leaping in slow motion to the strains of Manuel de Falla's *Ritual Fire Dance* (Video clip, *Fire Music*). Pieces from the *Music for Children* volumes have inspired some skilled animations from eighth graders, and animation has been a way for these older kids to appreciate anew the delight of this repertoire.

### Conclusion

My experiments with animation in the music classroom have taught me some lessons. First, some materials work better than others. Although clay is the classic stop-time medium, taken to amazing heights in shows like *Wallace and Gromit*, it is actually quite difficult and frustrating to handle when animating. Two-dimensional materials work

better and are much easier to illuminate and film. My students have had success with fingerpaint, colorforms, white board marker, and paper figures.

Second, as with any art form, the legacy of great works by masters can inspire children's creative efforts but it can also intimidate. As animators in the classroom, our kids won't be able to make the kind of seamless visual worlds they see in *Toy Story* or *Zootopia*, but we want what they do produce to look good on screen. My best projects have had a visual aesthetic that reminds me of the musical world of the Schulwerk—childlike and fresh and beautiful, like the creative minds of children.

And finally, I want to restate an important principle I put forth in this publication over 10 years ago that is still relevant today (Harding 2006): Video and animation work can be an exciting extension of our work with movement and music, but it should never eliminate or replace

movement and dance in our Orff programs. The younger the students, the more emphasis we should place on three-dimensional experience. Screens large and small are occupying more and more of our time, and our work as Orff Schulwerk teachers with sound and gesture and contact between human beings is a much-needed counterbalance to this powerful tendency. That being said, animation can be a thrilling medium to add to the broad vision of music making Orff Schulwerk encompasses. ■

### ANIMATION AND PERFORMANCES

Video clips of student compositions mentioned in this article are available at [www.aosa.org](http://www.aosa.org) under Publications>The Orff Echo>Echo Extensions.

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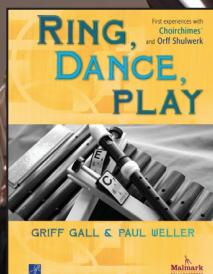
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# CHILDREN'S BOOK REVIEW

Reviewed by Tiffany English

## Let's Play!

Written and Illustrated by Hervé Tullet  
Translated by Christopher Franceschelli  
San Francisco, CA: Handprint Books,  
Chronicle Books, LLC, 2016

“Wanna play?” From the opening page, *Let's Play*, by Hervé Tullet, beckons to the reader, whether child or adult. The journey begins with a friend—an engaging, adventurous yellow dot that confides in the reader and encourages teamwork to get through this playful journey. Readers familiar with Tullet's other works, *Mix It Up!* and *Press Here*, know that Tullet delights in giving the reader a joyous, jaunty, exciting ride complete with color, shape, and motion. In this book, however, Tullet brings in something new—emotion. The courageous yellow dot encourages the reader to explore humor, joy, fear, anxiety, relief, and delight.

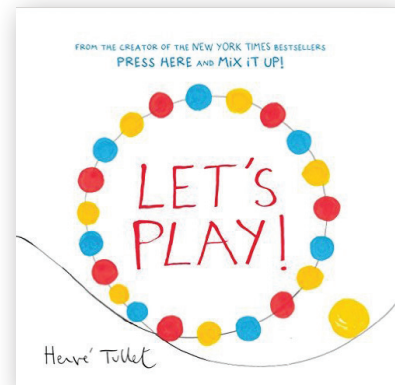
At first the little yellow dot is bored. But when the reader cracks open the cover, the dot becomes personified with a delightful point of view that encourages children to join the adventure with their own inventive sounds, ideas, and movement. The initial pages of the story lend themselves to lively vocal and movement exploration. By following the simple twisting lines of the illustrations, children are able to interpret visual information through their own creativity. The beginning pages also spark ideas of composition with line and shape such as an aleotric composition conceived by the children. These initial pages also bring to mind orchestration. Giving children choices on which

timbres should represent particular colors, shapes, lines, background, and so on inspires excitement and results in a truly playful musical experience. Consider “playing” pages from left to right, corner to corner, bottom to top, or any other interesting manner.

Although this book may initially look like it is for younger primary-age children, consider introducing it to your older students. “Ready?” the yellow dot asks while entering a black, seemingly empty space. The contrast between the beginning of the book and this section begs children to examine those emotions. Consider modal improvisation or composition. Which mode works best for the happier, playful beginning pages? Which mode captures the fear of the dark or the fear of heights? Is there a mode with a sense of humor? Is there a straightforward mode that could help operate the traffic light? The questions keep coming: “Now what do you think we should do?” This perpetual question Orff Schulwerk practitioners ask their students daily appears perfectly in the middle of the book and invites delightful, enchanting, child-centered flights of fancy.

In addition to improvisation with modes, the yellow dot invites—no, he implores—movement. The twisty, scribbly, bumpy shapes invite children to form group statues and traverse pathways. As the pages proceed, the shapes morph. Using these illustrations as a springboard gives students a concrete example that will spark their imaginations. Consider a negative space game where students silently change from shape to shape, from group to group.

For younger children, or perhaps those with less movement experience, Tullet has included an opportunity for creation and experimentation as well. “Turn,” “run,” “flip,” and “fly.” The yellow dot continues the joyful journey and this time with friends! The red and blue dots have joined



the amusing escapade, and it is brilliant.

“Play some more?” The yellow dot has recovered from the fear and anxiety of the dark space and the high red ledge. Now it is time for play—literally. A game of red light/green light ensues. The yellow dot asks the reader to count to 10. “What else can we do?”—yet another perpetual question familiar to Orff Schulwerk practitioners—leads to exploring the numbers. Perhaps the children work with changing meters as they count. Perhaps they create patterns of numbers that translate into rhythmic word chains, or perhaps they focus on the syllables in the number words to shape their own ostinato patterns. “Amazing, right?”

“Oh I have an idea!” The yellow dot beckons the reader to sing, frolic, and explore. From the beginning to the end, this book lends itself to enthusiastic discovery. The author of over

50 children’s books, Tullet excels in integrating the reader into his works. *Let’s Play* is a whimsical journey through a child’s emotions and imagination and the final sentence of the book, “Do you want to come back some time and play some more?” says it all. ■

**TIFFANY ENGLISH** is the music specialist at Sugar Hill Elementary School in Gwinnett County, Georgia. She holds multiple degrees from the University of Georgia and Piedmont College. Her education also includes post-Level III Orff Schulwerk teacher education and Level I Kodály training. Tiffany has served AOSA as Region IV representative on the National Board of Trustees, chair of the Professional Development Committee, president of the Atlanta Area Orff Chapter, and co-chair for the 2014 AOSA Professional Development Conference in Nashville, Tennessee. She also served on the AOSA Executive Committee as vice president, 2015-2017, and currently serves as president.



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Reviewed by Kaethe Grabenhofer

## The Noisy Paint Box: The Colors and Sounds of Kandinsky's Abstract Art

Written by Barb Rosenstock

Illustrated by Mary GrandPré

New York, NY: Knopf Books for Young Readers, 2014

Author Barb Rosenstock's book, *The Noisy Paint Box*, tells the story of Vasily Kandinsky, one of the first abstract artists. As a child, he struggled to paint like everyone else at the time but ultimately discovered he needed to paint what he felt. In doing so, he became well known throughout the world for his abstract paintings.

Rosenstock relates how Vasily learned to be a proper Russian boy. He practiced the piano and sat politely at family adult dinners as well-behaved children were taught to do. When his aunt gave him a paint box, however, Vasily mixed colors and painted the music the colors made for him. "What's it supposed to be?" his family asked as they looked at his work. They decided to send him to art class to learn to follow the customary guidelines for painting pretty pictures and drawing houses and flowers just like everyone else.

Vasily eventually ignored his desire to become a painter and instead studied to become a lawyer. While living in Moscow, he still heard music from the bright colors of the mailbox, the sunset, and the snowflakes. At the opera, "as the orchestra's music surrounded him, the colors of the noisy paint box twirled wildly in his mind." Vasily saw pistachio and garnet triangles and vermilion and coral stomping lines. When he could not ignore the colors he saw, he quit

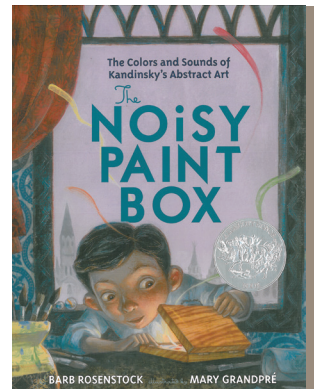
his job teaching law and moved to Munich to study painting. To please his teachers, he once again painted pretty landscapes. Then in an act of bravery, Vasily began to create something new by painting what he felt. Although this work looked nothing like the landscapes his teachers preferred, he painted what he heard. He created works of abstract art and named them after the music he loved—*Improvisation*, *Movement*, and *Three Sounds*.

It is thought Kandinsky had a condition called *synesthesia*, a genetic condition in which one sense reflects in a different sense, their paths seeming to cross or blend. It is possible he actually heard music for each color. As Kandinsky described his experience, "I could hear the hiss of colors as they mingled."

Mary GrandPré's illustrations spring to life as the lines and curves jump off the canvas into the story. She pulls the reader into this Caldecott Honor Book with text dancing on the page. As an award-winning illustrator, GrandPré's artwork also illustrates Poet Laureate Jack Prelutsky's *The Carnival of the Animals*.

In the classroom, Orff Schulwerk teachers can bring this book to life in many creative ways. Through movement with large shapes, students can create their own dance representing Kandinsky's paintings. The music might be something by Eric Chappelle or from the dance series, *Rhythmically Moving*. Playing music to represent different shapes in the paintings is another activity you can develop in conjunction with this book. To represent shapes, play pieces from the Volumes in various time signatures. Invite students to listen to Wagner's *Lohengrin* and then, just as the young Kandinsky did, paint what they hear. This activity might be possible for use by a substitute teacher who does not have skills in teaching music, if the media were crayons rather than paint.

This lovely book is perfect for collaboration among the art and music teachers in a school district. Third- and fourth-grade students will enjoy creating movement pieces in response



to Kandinsky's paintings. Project a photo of a painting on a screen for the audience to see while students perform the movement and music. Or engage the audience in this culmination of music, art, and movement by hanging artwork from the classroom in the hallways for them to peruse on their way to the performance. Who knows? Carl Orff and Vasily Kandinsky may be

sitting in the audience together, smiling as they watch their legacies continue. ■

**KAETHE GRABENHOFER** is an Orff Schulwerk teacher of kindergarten through Grade 8 at First Immanuel Lutheran School in Cedarburg, Wisconsin. In addition to her work with children, she serves on the Greater Milwaukee Chapter Board and is a founding member of the Milwaukee Handbell Ensemble.

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Reviewed by Jennifer Dennett

## Meaningful Movement: A Music Teacher's Guide to Dalcroze Eurhythmics

Written by Marla Butke and David Frego  
Cleveland, OH: MIE Publications, 2016

As English writer and philosopher William Hazlitt once said, “Everything is in motion. Everything flows. Everything is vibrating.” Through movement we experience music, and through meaningful movement we facilitate our students’ musicality. In the ongoing search for meaningful movement explorations to incorporate into my classroom, I found *Meaningful Movement* by Marla Butke and David Frego to be an amazing resource. This book, much like what I have experienced in their conference sessions, imparts their practical, informative, and aesthetically satisfying concepts and techniques.

The clear structure of *Meaningful Movement* makes it easily accessible to all music educators. Orff Schulwerk teachers will connect with the emphasis on expressive, responsive, and creative movement, as well as the scaffolding process from teacher- to student-driven activities. The lessons for each chapter are divided into four phases: introductory, beginning, intermediate, and advanced. It is important to note there are no specific grade levels correlated to the phases. Rather, the teacher determines what level is most appropriate for his or her students, based on their current needs and experience.

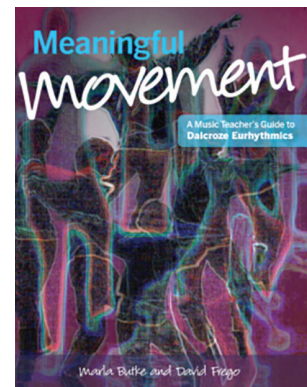
After a brief introductory chapter, the following four chapters each address a major concept—focus, eurhythmics, expressive

movement/*plastique animée*, and rhythmic solfège. The first concept is focus and includes activities that “direct a student’s attention to a particular task.” These focus activities prepare the mind and body for the music and movement tasks ahead, as well as increase students’ ability to focus for longer periods and focus more deeply on complex activities.

A favorite focus activity with my students is Alphabet/Number. This simple introductory activity consists of students counting from one to twenty-six while the teacher says the letters of the alphabet between the numbers (1, A, 2, B, 3, C, and so on). Students point to themselves for their turn and the teacher for his or her turn. This can also be done with the roles reversed. Either way, this activity requires students and the teacher to focus on their task and think ahead. The next challenge is for students to speak both the letters and numbers, keeping a steady beat using one hand for letters and the other for numbers. From here, the level of complexity can increase in any number of ways.

The next chapter highlights the concept of eurhythmics, which is defined as “purposeful movement to increase rhythmic integrity and to teach a variety of musical concepts.” The most basic element of rhythmic integrity is finding one’s personal pulse, which is the first introductory-level eurhythmics lesson in the chapter. This involves students walking at their own personal pace and becoming aware enough of that pace to be able to continue tapping the beat after they stop walking, and then eventually internalize that tempo and simply feel it in their own stillness. Many activities in this chapter focus on pulse, duration, and meter, but eurhythmic activities can also be used to experience melody and harmony. For example, students can use movement in different directions to respond to various chords as they expand their harmonic vocabulary.

The third concept explored is expressive movement/*plastique animée*, “an expressive



visualization of the music in an artistic and meaningful way.” The first part of this two-part chapter includes teacher-driven, short process activities that provide the experience and foundation for the student-created, long process activities in the second part of the chapter. Once students have experienced concepts such as direction, mirroring, shadowing, energy, flocking, tension and release, and others in a teacher-led environment, they can translate those experiences into their own creations.

In the second part of the chapter, the authors suggest several musical pieces for student-led creations, including the musical concepts these pieces can reinforce. They do not describe the process here; at this point the teacher should provide minimal input and allow students to make the creative decisions.

Rhythmic solfège is the fourth and final concept addressed. It is defined as “an aspect of the Dalcroze approach that focuses on purposeful movement while singing; the creation and manipulation of melodies; and the strengthening of inner hearing in both rhythm and pitch.” In its most basic form, this involves students hearing pitches and showing them with their bodies, for example, hearing two pitches and snapping on the higher pitch and clapping on the lower one. A beginning activity is “Gravity Scale,” where students gradually stand as the teacher plays an ascending major scale and gradually sit for the descending scale, never fully standing or

sitting until they hear the pitch “do.” At the most advanced level, students are decoding unknown melodies through rhythmic and melodic dictation.

The final chapter includes a variety of useful supplemental materials. Those who are wary of the piano improvisation aspect of Dalcroze eurhythmics will appreciate the tips on how to build your improvisation vocabulary. Sample lesson plans and rubrics, an index of musical concepts and the activities that can be used to teach them, 79 suggested musical recordings, and a glossary are featured. Finally, a link accesses 31 videos of lessons presented by children and adults.

The amount of information provided in this relatively short, user-friendly book is truly impressive, and it is easy to integrate the lessons and activities into your day-to-day teaching. Your students, like mine, will enjoy doing them and building their musicality. If you are always searching for meaningful movement explorations to use in the classroom, be sure to check out Butke and Frego’s *Meaningful Movement!* ■

**JENNIFER DENNETT** is an elementary music and movement specialist in Danvers, Massachusetts. She earned a bachelor’s degree in music education from the University of Rhode Island and a master’s degree in music history from Tufts University. She has successfully completed three levels of Orff Schulwerk teacher education and is a past president of the New England Chapter of the American Orff-Schulwerk Association.

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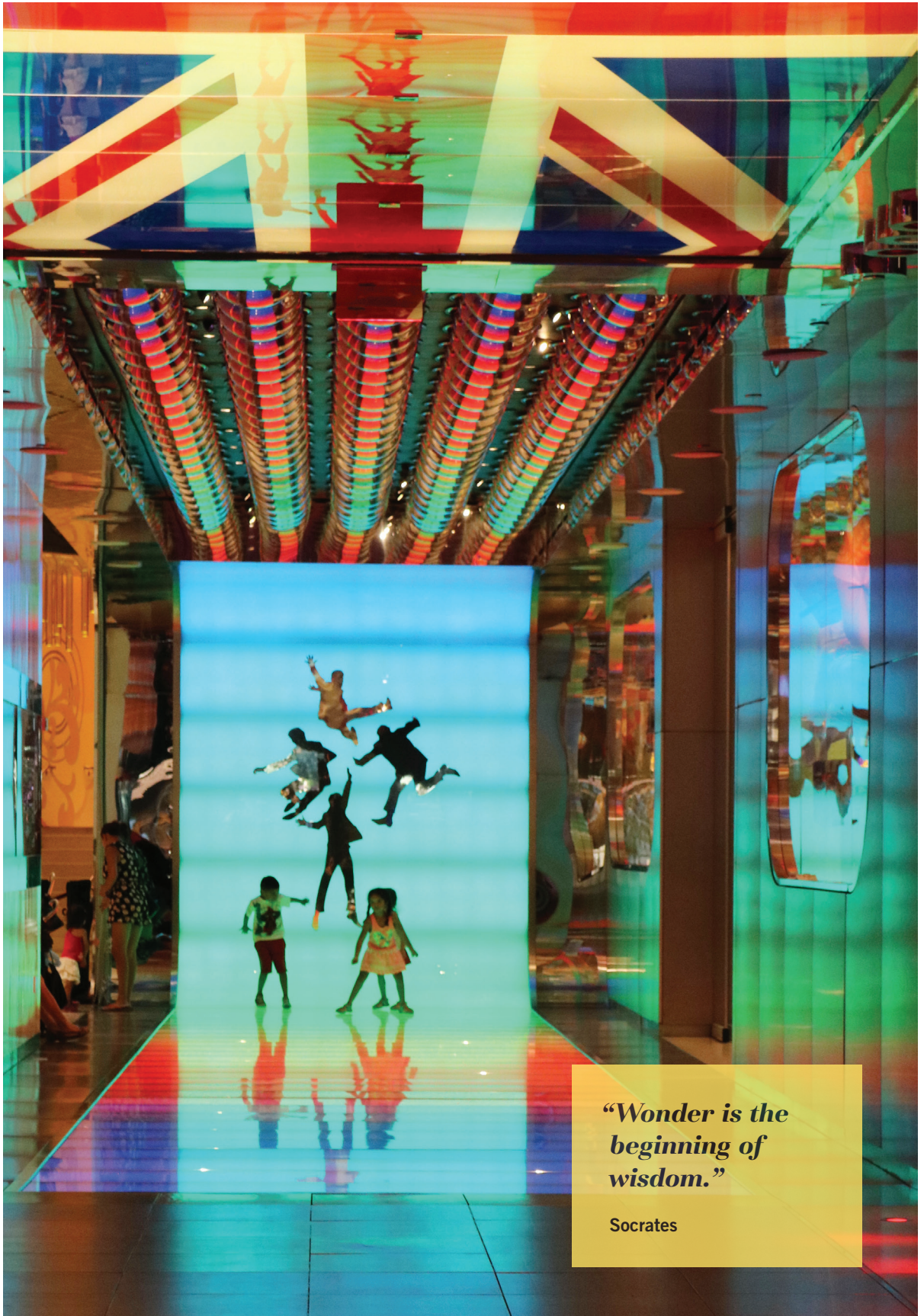
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wisdom.”*

Socrates

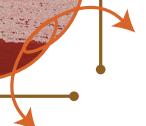
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