

EDITORIAL

By

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Curiosity, Creativity and Cognition: A Window Into Jeanne Bamberger's Work

The phrase “curiosity killed the cat” often serves as a warning to children that if they are too curious, they could get into trouble. Parents use it when they have been bombarded with too many "why" questions and teachers have been known to use it when students' infinite questions threaten to veer their lessons off track and threaten their control. Yet, one of the many paradoxes of formal schooling is that teachers often repress students' natural proclivity to ask questions and express their curiosity, wasting some of the most productive motivation for learning, exploring, and developing creative musical thinking.

An insatiable curiosity is certainly one of the first things one notices upon meeting and spending time with Jeanne Bamberger. Jeanne is the embodiment of the curious questioner, a quality revered in many of the articles in this special issue of *Visions of Research in Music Education*. For those familiar with her research, she brings

a sense of wonder, possibility, and tremendous insight to her work with children and adults alike.

Though we, the authors, have been following the work of Jeanne Bamberger for years, we first met Jeanne in person as a result of a National Science Foundation grant researching interdisciplinary pathways among the arts and computing.¹ During a breakfast meeting, our colleague and project evaluator, Sarah Kuhn, casually mentioned she was going to California to spend time with a family friend, Jeanne Bamberger, and that perhaps "we knew of her." Did we know of her? Was that a serious question? It was likely that Sarah made the connection to Jeanne because of the invented music notation project we were adapting in our research at the time.

To say that Jeanne Bamberger's work has influenced our thinking about teaching and learning would be a major understatement. Reading Jeanne's research on musical intuition and cognition has prompted many an "a-ha" moment for us. Spanning over 40 years, her interdisciplinary research integrating music theory and practice, performance, modes of representation, and cognitive theory has problematized and cast new light on long held assumptions related to children's music learning and pedagogy. She is perhaps most well known for her research into the ways people understand and learn music through designing novel situations as windows into what children already know and in providing multiple ways for students to represent, express, explore, and build upon their intuitive musical thinking and understandings.

During an era when it was becoming apparent that technology would play a major role in music education and research, Jeanne, as a result of her work at MIT with

¹*CPATH CB: Performamatics: Connecting computer science to the performing, fine, and design arts*. Retrieved from www.nsf.gov/awardsearch/showAward.do?AwardNumber=0722161

Seymour Papert, took a turn from the rest of the music education technology field in the design of the software program *Impromptu*. The cognitivist underpinnings of *Impromptu* marked a groundbreaking shift in the design of music education technology software, a field dominated at the time by software influenced by behaviorist “skill and drill” theories of music learning and teaching. Influenced deeply by her own close work with Papert on *Logo*, Jeanne set out to design *Impromptu* as a constructionist, project-based musical micro-world that researchers and teachers could use to help make children’s musical thinking, intuitions, and problem solving processes audible and visible.

Impromptu and its predecessor, *Music Logo*, are among the first examples of music software enabling users to work with, construct, and shift between multiple representations of musical sound. As such, *Impromptu* became a vehicle for use in Jeanne’s own research, as well as an environment that teachers and students could explore inside and outside of the music classroom. The design principles behind *Impromptu* have continued to influence music education software, notably including Morton Subotnick’s *Making Music*; Andrew Brown, Andrew Sorensen, and Steve Dillon’s *Jam2Jam*, which is described later in this issue; and Eric Rosenbaum’s *Singing Fingers* for iPhone & iPad.

Thanks to Sarah Kuhn's personal introduction, funding from our music department, and support from our grant PI and colleague Jesse Heines, we were able to bring Jeanne to the University of Massachusetts Lowell for a weekend-long symposium on musical intuition. Through the sponsorship of the Society for Research in Music Education, Jeanne Bamberger was also invited to present a keynote for the Creativity SRIG at the 2010 Biennial Conference of the National Association for Music Education.

These not so "chance" recent encounters with Jeanne and her work as well as our continuing collaboration is what prompted our desire to re-visit some of her now out-of-print work, along with soliciting new research and articles from other people who have either worked with Jeanne or have been influenced by her work.

This special issue of *Visions of Research in Music Education* celebrates Jeanne Bamberger's enduring influence on the fields of music cognition, education, and technology. We could not think of a better way to open this issue than with a preface from her friend and early collaborator, Howard Gardner. As someone who has shifted the profession a few times himself with major contributions to arts education and creativity, his remembrances of his early encounters with Jeanne set the stage and provide the context for the various research articles and tributes to follow.

We follow with our own "On Chunking, Simples, and Paradoxes: Why Jeanne Bamberger's Research Matters." As this issue makes clear, Jeanne's work has far-reaching influence. Since music teacher educators have each benefitted greatly from her work and insight, we provide a historical framework for situating her research within the field of music education and its impact on our own work in the classroom.

In the next article "Interactive Performance Software in Music Education Research: As Inspired by the Work of Jeanne Bamberger," Andrew Brown situates his own research on musical engagement and the development of *Jam2Jam* in the theoretical underpinnings of Bamberger and Papert's work in music software design. Through two case studies, Brown illustrates his own music software development process and the educational and research possibilities of *Jam2Jam*.

The article “Building and Composing Upon Musical Knowledge” by Kimberly Lansinger Ankney, examines children’s musical compositions and the manner in which three other music technology software programs support a child’s musical intuitions through the lens of Jeanne’s work.

Using *Impromptu* to develop cross-cultural understandings among immigrant students in a Midwestern US school and an Israeli school is the focus of the research in “Composing Pieces for Peace: Using *Impromptu* to Build Cross-Cultural Awareness” by Michael P. Downton, Kylie A. Pepler, Adena Portowitz, Jeanne Bamberger, and Eric Lindsay. Through these authors’ work with Jeanne, they share their research on the effectiveness of culturally relevant music compositions on student’s perceptions of their counterparts from other cultures.

Jessica Krash’s “Reminiscence on studying with Jeanne Bamberger” provides another perspective of Jeanne as a teacher who values her students ideas, once again underscoring Miles Davis’ assertion that in music “there are no mistakes.”

Joyce Kouffman provides a personal reminiscence as an undergraduate in one of Jeanne’s classes at Harvard in “Jeanne Bamberger – Vignettes from 1974-1976”. She recounts her own experiences working with “tuneblocks” and the many insights that influence her own teaching as gleaned from Jeanne.

The field of music cognition has benefited greatly from Jeanne’s rich descriptive work in her seminal book *The Mind Behind the Musical Ear* (1991). Wilfried Gruhn presents her research in “Representations of Music: Neural Foundations and Mental Processes” through the story of “Jeff” to provide an account of how the author’s research

into the neural foundations of musical representation has been influenced by Jeanne Bamberger's work.

Jeanne's research in music cognition serves as a framework for "Channeling Bamberger: An Unorthodox Appreciation of Jeanne Bamberger's Work on Musical Development and Musical Understanding." Craig Graci details how Jeanne's work with musical structure and boundary groupings correlates to the author's own research into computational formalism.

In "About Time: Strategies of Performance Revealed in Graphs," Elaine Chew provides a glimpse into her music cognition research with engineering students using scientific approaches to uncover performance principles. She outlines a student project based on a guest lecture Jeanne gave in her class as well as two other projects that develop tools to better understand performance practices.

Christopher Hasty's article, "Learning in Time," highlights music's temporal nature, one of the major themes of Jeanne's research. Hasty makes the case that what one hears in a piece of music and how one hears it is of much more significance than what one sees in the score, providing further evidence of the interrelationship between a performance of a musical work and a hearing of a musical work.

We link to a previously published article in this Journal by Deborah V. Blair entitled "Do you hear what I hear? Musical maps and felt pathways of musical understanding." Building on Bamberger's notion of musical "felt paths," Blair investigates the nature of children's meaning making when creating and performing musical maps.

Finally, following in a tradition of and commitment to reprinting out-of-print works in music education, VRME is pleased to reprint Jeanne's chapter "Developing Musical Structures: Going Beyond the Simples" originally published in *Musical transformation and musical intuition: Essays in honor of David Lewin* by Atlas and Cherlin (Eds.).

We would like to extend our thanks to Creativity SRIG Past-Chair, Thom Priest, and current Chair-Elect, Katy Strand, for their work in helping facilitate and co-sponsor this special issue. Jeanne's research has left an indelible mark on research in musical creativity, and we also thank each of the contributors for highlighting the many influences Jeanne has had on music education and beyond.

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