



MUSIC AND THE BRAIN
Strengthening Young Minds Through the
Language of Music

IMPACT EVALUATION

Executive Summary



Center for
Arts Education Research

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Research Results
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Methodology

This report presents statistical and qualitative data from our 2023 program evaluation of the Music and the Brain (MATB) program. Data collection began in January 2023 and continued through June 2023. Principal methods of data collection included classroom (n = 15) and professional development observations, teacher surveys (n = 67), teacher interviews in NYC and Philadelphia, examination of the MATB All Access instructional web platform for partner schools (learn.musicandthebrain.org), and review of MATB videos (performances, instruction, student interviews).

*The classroom observations employed the CALT (Classroom Assessment of Learning and Teaching) observational system for assessing program implementation and student achievement. The CALT system was developed by Dr. Horowitz and yields detailed quantitative and qualitative data through unobtrusive classroom observation. Details of the development of CALT are in the VSA publication *The Contours of Inclusion* (Horowitz, 2008).¹ Achievement indicators on the CALT were based on a content analysis of program materials, our prior MATB research, and discussion with MATB staff.*

The overall objectives of this study were to determine: (1) the impact of the implementation of Music and the Brain (MATB) in areas such as music skills, social-emotional learning, and related academic subjects; (2) the characteristics of the program and the All Access online platform delivery system that supports this impact, such as curriculum content, user experience and interface, content and program structure, collaboration with teachers and schools, and professional development.

Summary



According to analysis of teacher surveys, interviews and classroom observations, there was strong evidence of the effectiveness of the in-school Music and the Brain program. The materials were well sequenced and content-rich and provided a structured approach to providing high quality keyboard and music instruction. The curriculum was flexible and varied and provided multiple approaches to customizing instruction to each teacher's unique context, classroom and school. The operational curriculum supported students' development of music skills, cultural understanding, and social emotional learning. MATB differs from most other arts collaborations through providing instruction through arts specialist teachers, emphasizing deep skills in the art form (music), providing comprehensive curriculum resources, and often working with students throughout the entire school year.



The program provided music instruction to underserved communities that might otherwise not be able to learn from a well-resourced and well-trained specialist music teacher. The music repertoire intentionally reflected cultural experiences of the students.

The MATB All Access web platform (learn.musicandthebrain.org) was highly effective in providing classroom support for well sequenced and engaging music instruction. During our observations we noted the enthusiastic participation of students with the videos, music, keyboards, and varied musical exercises. Children were clearly making gains in music skills, including decoding notation, understanding rhythms, keyboard, singing and understanding of different musical styles and characteristics. Fine motor skills and understanding of fingerings were enhanced, as well.

The program supported SEL skills through working on music together and peer learning and reflection, often in pairs at the keyboards. Students would respond positively to their peers' musical endeavors, and sometimes help with fingerings or understanding notation. They learned to be respectful of each other's creative process, as well as their physical space.

Student Development

MATB supported strong gains in aspects of social-emotional learning, including collaboration, teamwork, peer relations, and respect for other's feelings.

- 91% of teachers reported that their students developed collaborative skills through MATB.
- 100% of teachers reported that their students increased classroom engagement through MATB
- 94% of teachers reported that students demonstrated increased focus and task persistence.
- 98% of teachers reported that students developed self-confidence.
- 97% of teachers reported that students demonstrated respect for other students' ideas, feelings and perspectives.
- 92% of teachers reported that students relieved stress through MATB.
- 98% of teachers reported that students received positive feedback from their peers through MATB.
- 100% of teachers reported that students demonstrated a sense of accomplishment and achievement.
- 92% of teachers reported that students improved their teamwork skills through MATB.

Students developed a strong music literacy foundation through MATB instruction. They learned basic music reading skills, practiced singing and playing written music, and performed rhythms by clapping, tapping, and singing. They had a clear understanding of notation symbols, such as repeat signs, clefs, and dynamic markings. Students developed their ability to play and sing in time with a steady pulse. Students also improved their listening skills.



“Students are engaging with it like never before. The whole concept of being able to play on the keyboard cards and then transfer that to the keyboard keeps them more focused and directed... Reading music was such a monumental task, but it's broken down very easily ... they're engaging with it and they're having so much fun with it.”

The activities are very varied and the instructional pacing was often exceptional. Children were very engaged. They would rise and dance to the warm-up videos without prompting. They would participate in singing, movement, reading notation, rhythms, pitches, listening, singing lyrics, as well as keyboards – all in one class. They were often eager to demonstrate what they were accomplishing. Other students seemed supportive as they listened and encouraged their peers.



Teachers reported significant development of music reading, listening, keyboard, and fine motor skills through MATB.

- 99% of teachers reported that their students increased keyboard skills through MATB.
- 99% of teachers reported that their students increased music reading skills through MATB.
- 97% of teachers reported that students increased listening skills through MATB.
- 100% of teachers reported that students increased fine motor skills through MATB.

MATB songs and materials exposed children to varied musical traditions. Instruction was culturally relevant to students and often reflected their own cultures and musical traditions.

- 86% of teachers reported that their students demonstrated an increase in understanding of varied cultures and traditions.
- 75% of teachers reported that their students' own cultures and musical traditions were represented through MATB songs.
- 83% of teachers reported that MATB songs and materials were culturally relevant to their students.

“The music selections are often culturally responsive, serving as mirrors and windows for students, both of which the students love! Students love the texts that they can make connections to, such as Duerme Pronto. They are excited to make personal connections and share stories from home. With songs like Sorida students can make cross-cultural connections and share other hand-clapping games played during recess, such as “chocolate.”

“I think students loved the contemporary music, cool rearrangements of classic songs, and music from diverse cultural backgrounds.

Teachers reported development of other academic skills through MATB, with improvement in ELA, math, speaking, special needs and ESL.

- 92% of teachers reported that MATB supported development of English language skills, through exploring and singing lyrics to songs.
- 82% of teachers reported that MATB developed students' mathematical skills.
- 75% of teachers reported that MATB improved students' public speaking and communication skills.
- 88% of teachers reported that MATB improved skills of students learning English as a second language.
- 91% of teachers reported that MATB improved skills of students with special needs.



- MATB helped English language learners develop literacy skills through song lyrics and description of musical concepts. The new vocabulary and its application was more likely to “stick” because students were engaged through the music and enjoyed their growing ability to sing and perform the songs.
- Music instruction through MATB was particularly valuable for students with special needs.

Web Platform and Instructional Resources

The All Access web platform (learn.musicandthebrain.org) transformed teachers' ability to provide multi-dimensional music instruction in classrooms and at home. The platform placed all resources in one easy to disseminate location, facilitating well-paced and well-resourced classroom instruction. Teachers were easily able to use classroom technology to utilize warm-up and song videos, note reading exercises and other varied tasks. Students were able to continue learning at home, if that process was structured within the class. The student accounts feature facilitated individualized instruction and reflective assessment.

The MATB All Access platform was exceptionally useful as an aid to classroom and at-home music instruction.

- 100% of teachers reported that the All Access web platform elevated their lesson productivity
 - 99% of teachers reported that the All Access web platform lesson added deeper cross curricular elements to their teaching.
 - 100% of teachers reported that the All Access web platform video content and activities increased student engagement and comprehension.
 - 97% of teachers reported that MATB lesson pedagogy improved classroom management.
 - 100% of teachers reported that MATB resources improved their lesson planning.
 - 100% of teachers reported that MATB resources improved the scope and sequence of their lessons.
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- *I am more organized, and I have learned a more effective way of planning my lessons.*
 - *Planning, planning, planning! I can plan for activities, questions, and feedback through the platform. I can also use the unit workbooks for proof of learning.*
 - *The structure of MATB is a godsend.*
 - *My time and classroom management skills have definitely improved because of MATB.*
 - *I believe that having my students be more hands-on helped them succeed much faster.*
 - *I am more organized.*
 - *The program has made my lessons smoother and more engaging for the students.*

Teachers identified the components of MATB resources that they believed were most useful in improving their instruction. Teachers cited Structure, Organization, Decreased Planning Time, Time Management, Scope and Sequence, and Cross-Curricular Elements as most effective at improving their teaching.

Professional Development

- MATB teacher professional development was highly effective in preparing teachers to use the All Access platform and incorporate it into their lesson's scope and sequence. Professional development included hands-on modeling of instruction, partnering and reflection, web instruction, networking and peer review, and lesson planning. Teachers had ample opportunities to share experiences with other and develop mentoring relationships.
- Teachers described MATB professional development as exceptionally valuable. They appreciated the rigorous content, lesson modeling, technical support, and the opportunity to network with other music teachers. They particularly valued the opportunity to learn from the experience of other teachers and their introduction to the All Access platform.
- Teachers attributed significant growth in their teaching to MATB professional development. They learned to effectively use the All Access platform and incorporate varied instructional strategies into their lesson planning. They gained focus and expertise at teaching keyboards, applying music from different cultures and supporting an effective and collaborative learning environment.



- The Facing Mirrors workshop helped teachers reflect on and improve their practice, through improving classroom management, lesson and curriculum planning, and incorporating feedback.
- Participating in MATB and their use of All Access and professional development significantly improved the pedagogical practice of the music teachers. The resources, web platform, and insights into classroom management and lesson planning have provided an effective structure for music instruction that teachers expect to use for the rest of their career.
- Teachers that used the student accounts feature of All Access described it as an invaluable resource for individualized instruction, assessment, at-home learning, and student engagement.

Additional Quotes from Teachers and Students Surveyed

“Students who arrived from various countries don’t speak English so playing the piano helped them to integrate into a school community easier. Music is a universal language.”

“The most important part of the MATB learning for ESL and low learners is the finger numbers. They can begin to be successful at playing music on the piano because the numbers 1-5 are easy to learn in English and put together with the number strips on the keyboards they can make music successfully. This leads to confidence and confidence leads to other learning.”

“I have used MATB in solely ICT classrooms, and the method is very scaffolded and multi-sensory. The curriculum can also be really flexible, so I found it easy as a teacher to make this program successful for students with special needs. It provided a sense of accomplishment.”

“The MATB leaders and staff always do a tremendous job of demo-ing new elements and concepts and making sure that teachers in the MATB platform are comfortable. I greatly enjoy any professional development sessions that MATB provides.”

“I have been able to standardize my lesson plans. Students crave routine. Having MATB help with classroom management ideas, pacing and identifying the reasons for each of the songs included in the book has been invaluable. Having multiple activities and resource/slides allows me to customize my lessons. Getting ideas on how to use those resources to help students learn – priceless!”

“Absolutely! I am a much better teacher because of MATB. I have all the resources that I need at my disposal. This allows me to spend my planning time thinking about how to tweak the lessons and embed more differentiation to meet the needs of my students instead of scrambling to find resources that don’t always result in a well-crafted lesson.”

“It’s the most wonderful thing that has happened to us in Miami Dade County. We get to enjoy our passion stress-free and we see actual progress in students as well as more engagement during instruction.”

“MATB gives access to all students. I am thrilled that I can say that every student in my school is learning to play an instrument. Having a MATB as the foundation of the general music curriculum has improved student musicianship and motivation to get better. My junior band and violin students this year already walked into my classroom with so much knowledge, and they were able to transfer what they learned to their instruments. MATB is leveling the playing field one classroom at a time. Thank you!”

“There were students that were so excited about completing challenging songs which helped their self-esteem and gained the respect of their classmates. They experienced a sense of great accomplishment and pride.”

“I saw students, who either could not speak English or had a social or emotional disadvantage, blossom while working with a peer. The peer helper exhibited patience and compassion which allowed the partner to try something new and succeed.”

STUDENT QUOTES

“I can tell my piano skills are improving because I used to go really slow and I’d keep messing up and now I can go at the right pace and it’ll sound alright.”

“Something I like about playing the piano is it’s a way for me to relax when I’m upset or angry about something. It gives me something to do. When I become bored I can try and make something up on the piano.”

“It’s really relaxing and there’s endless things you can do on the piano. It’s just very intriguing.”

“It makes me feel calm and happy.”