



# The Learning Community Group

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## **LEARNING THROUGH MUSIC AND TECHNOLOGY:** **An Affordable and Sustainable Program for Communities**



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## **Our Vision for Learning Communities**



## Our Vision for Learning Communities

The Learning Community Group (TheLCG) is a research and teaching organization that provides schools and communities with strategic technology solutions. Partnering with leading institutions and corporations, TheLCG originates innovative curriculum design and implementation strategies, web based communication systems, and new entrepreneurial opportunities for the clients that we service. We bring our clients to the forefront of the digital media industry with our affordable media production systems, hands-on training, research initiatives, and our own network of streaming media services available twenty-four hours a day, anywhere in the world.

- **Pedagogy and Curriculum Development:** TheLCG is a research and teaching organization that develops models for effective learning. TheLCG curriculum development lab, located at the Boston Museum of Science, creates pedagogical frameworks that integrate current and emerging technologies. New models include Learning Through Music and Technology (LTMT), Learning Through Video and Technology (LTVT), and Learning Through Photography and Technology (LTPT).
- **Technological Expertise:** By partnering with TheLCG, you can create a virtual extension of your organization that includes research and development, strategic planning, web based communication systems, customized hardware solutions, and a highly trained and dedicated staff.
- **Action Research:** TheLCG uses controlled studies to implement and test cutting edge pedagogical methods within the classroom and out of school. TheLCG creates rubrics and assessment frameworks to track data in order to measure outcomes to refine best practices in education.
- **Teacher Training:** TheLCG provides ongoing support through teacher training and digital forums. By providing hands-on training for teachers in their own organization, TheLCG disseminates new curricular models integrated with their existing programs. Digital forums keep teachers connected while fostering dialogue and collaborative lesson plan development.
- **The Entrepreneurial Institute (EI):** TheLCG has designed the EI to catalyze learned skills into real world application. The apprentice structure within our constituency enables students to apply the skills they hone to projects in business and professional sectors.
- **WWCBN:** TheLCG hosts the World-Wide Community Broadcast Network (WWCBN), the creative voice of the clients we serve. Hosting streaming media programs, clients can reach the world with their unique vision and mode of expression.

## Learning Through Music and Technology

TheLCG and The Research Center For Learning Through Music at The New England Conservatory of Music have announced a joint partnership to facilitate the research and development of a technology-enhanced Learning Through Music (LTM) curriculum. By using systemic research methods and controlled case studies to measure the impact of music technology in education, the partnership aims to create standards and curricula that can be utilized by schools and organizations to improve academic performance and unlock the potential of classroom learning across disciplines.

## NECM on LTM

In recent years understanding of the value of music in education has begun to change. Parents, educators, and researchers now agree that music has values for children that extend considerably beyond the ability to learn to play an instrument in a school band or sing in the school chorus. Musical study is now recognized for its impact on learning in other areas of the curriculum as well as for its contribution to a higher quality school or community learning environment.

Music and other arts integration strategies are now a part of new national standards of excellence in public education. Research reported in [Champions of Change: The Impact of the Arts on Learning](#) (published 1999 by the [Arts Education Partnership](#) and the [President's Committee on the Arts and the Humanities](#)), serves as a benchmark for the impact we expect Learning Through Music programs will have on its public school partners. The Executive Summary of this report entitled, "What the arts change about the learning experience," cites support for the assumption that Learning Through Music programs can be designed and implemented with the expectation that they will:

- Produce positive social impact on the school community. (An intervention program of learning in and through the arts can help "level the playing field" for youngsters from disadvantaged circumstances.)
- Correlate positively with success in the academics. ("Sustained involvement in particular art forms - music and theater - are highly correlated with success in mathematics and reading")
- Become most effective if they involve partnership with other cultural programs and resources. (Schools in partnership with other arts organizations advance quickly when compared to arts-deficient schools in the same neighborhoods).

## LCG Evolves LTMT

The LCG and NECM have formed a partnership based on the notion that LTM can benefit from extensive technology integration. In the summer of 2003, The LCG completed an inner-city action research program called MadJam '03 for students ages six to sixteen. The program successfully merged technology within an LTM curriculum, further proving the benefits of LTMT – Learning Through Music and Technology.

## The Five Processes

The connection between authentic music and core literacy is embodied in five processes for learning. The LCG addressed these five processes in its LTMT action research program.

- **Listen:** perceiving, focusing, observing, deciphering
- **Question:** inquire, investigate, test, discover
- **Create:** invent, improvise, produce, compose, transform
- **Perform:** demonstrate, recite, practice, memorize, interpret
- **Reflect:** self assess, set goals, plan, measure outcomes

During the program, TheLCG collected data on all program participants. The data and subsequent outcomes were assessed for how effectively they utilized the five processes within a technology-rich environment.

- **Process Outlines** were created to track best practices, and were used to highlight changes or additions to the lesson plans.
- **Musical Skill Elements** were documented to find connections between technology environments and the realization of authentic musical learning. These entries included ensemble performance practices, knowledge of the individual function of different instruments, understanding of rhythmic variance in tempo, generative changes in rhythmic complexity tied to pre-defined genres, vocal elements in an ensemble context, singing, rapping, rhythmic vocalization, dancing, movement, pulse interpretation and expression, compositional choice, and individual critical assessment of work.
- **Core Academic Elements** were documented to show the correlation between music and core literacy. These entries included critical thinking, pattern recognition, replication, goal oriented problem solving, cognitive priming for algebraic/fractional thinking, and hand-eye coordination.
- **Social/Emotional Development and Cultural Context** notes were taken to document student growth in these areas. Students learned to work together on collaborative composition projects and were encouraged to share their thoughts and ideas with the group collectively. Positive social interaction and effective problem solving helped students to build self-esteem, and feel connected to the program as valued members of a creative community. The MadJam '03 provided an active platform for students to explore music and ideas that are culturally relevant to them as individuals, and created a gateway to creative expression in a meaningful and authentic way.
- **Rubrics** were created to gauge outcomes of assigned activities. The students were graded on a scale from one to three, one being designated as “needs work”, three being designated as “proficient”.

## Outcomes

The Learning Community Group believes that LTM principles are best applied with technology. Technology supports the five processes of learning by providing immediate feedback to students and teachers as they work in real-time. The success of the MadJam '03 summer action research program can be attributed to the seamless balance of authentic music pedagogy and technological innovation. By continuing to originate best practices in technology-enhanced music education, TheLCG can affect positive change in schools, communities, and organization while meeting or exceeding State frameworks for education.

**MadJam '03 and Learning Through Music and Technology:**  
**Effective Models for Learning, Engagement, and Positive Youth Development**

September 2003



## Abstract

*In August of 2003, The Learning Community Group (TheLCG) and MassImpact completed a six-week inner-city action research program called Mad Jam '03. The program, which was conducted with students from both the upper and lower Roxbury neighborhoods in Boston, merged technology with the Learning Through Music (LTM) frameworks originated by the Research Center for Learning Through Music at The New England Conservatory of Music. TheLCG created a curriculum around the functionality of the MadWaves MadPlayer™, a portable composition tool that allows students to create digital music and recordings integrated with or independent of a computer lab environment. The outcomes presented below demonstrate success with the Learning Through Music and Technology (LTMT) frameworks, and suggest a replicable model for learning in schools and communities.*

### **Background**

In June 2003, MassImpact approached TheLCG to design and implement a summer program for community technology centers in and around the upper and lower Roxbury neighborhoods of Boston, MA. MassImpact expressed the need for a creative crime prevention initiative that would keep students aged six to sixteen engaged and learning through the summer. TheLCG created a six-week action research program that would utilize LTMT frameworks, and incorporate key technology tools into a course of study

### **Thaddeus Miles and MassImpact**

As the Director of Public Safety Mass Housing, Mr. Miles is responsible for implementing crime prevention strategies affecting several thousand units of housing throughout the Commonwealth of Massachusetts. Mr. Miles chairs and/or co-chairs a number of award winning Community Safety Task Force committees. On behalf of the U.S. Department of Housing and Urban Development and MassHousing, he spearheaded the development of eleven community-run computer centers in the Roxbury and Dorchester neighborhoods of Boston. The eleven Neighborhood Network Centers have been in operation over three years and offer a full range of programs to all ages.<sup>1</sup>

### **The Learning Community Group**

TheLCG is a research and teaching organization that provides schools and communities with strategic technology planning, curriculum development, web-based communication systems, and new entrepreneurial opportunities. TheLCG serves non-profit organizations such as schools, libraries, housing developments, early childhood centers, homeless shelters, and the Boston Museum of Science. Through a strategic partnership with the Research Center for Learning Through Music at The New England Conservatory, TheLCG is originating action research programs and curriculum designs that utilize Learning Through Music frameworks and state of the art technology. The outcomes that are produced are becoming the best practices and standards of Learning Through Music and Technology pedagogical frameworks.

### **The Research Center For Learning Through Music At The New England Conservatory**

The Research Center can be found at the heart of the New England Conservatory's education department, and is the cornerstone of development of LTM programs. LTM is an education initiative developed and implemented by NEC faculty and student interns to fulfill its renewed commitment to American public schools. It provides comprehensive, interdisciplinary music programs that also serve as an enhancement to learning in the music and grade level classroom. The goal of the program is to increase engagement in music skill development, enhance academic performance, and to create an environment of positive whole-school change. The New England Conservatory of Music was founded in 1867 by Eben Tourjée, and is America's oldest independent school of music.<sup>2</sup>

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<sup>1</sup> Information from <http://web.mit.edu/crcp/who/fellows.html#thaddeus>

<sup>2</sup> Information from <http://www.nec-musicined.org/>

## Sites

The Mad Jam '03 program was conducted at five technology centers that are funded and maintained by The Massachusetts Housing and Finance Authority and MassImpact: The NTC at Camfield/Roxse Community Center, Washington Heights Computer Center, Academy Homes Technology Center, SMS Computer Lab, and Franklin Park Technology Center. A TheLCG specialist directed and delivered the program at each site, with support from resident staff.

## Summary of Objectives

After initial meetings with MassImpact, TheLCG created seven objectives that served as guides for curriculum design and development:

- a) *Develop a creative crime prevention initiative that would keep students aged six to sixteen engaged and learning throughout the summer*  
Keeping children safely focused and engaged was the prime objective of Mad Jam '03. Music, as an essential language of communities, serves as an effective gateway for learning and was utilized as a means of increasing student interest and engagement.
- b) *Create a program that facilitates shared use of the computer lab with other summer programs*  
The efficient use of limited space was a paramount objective during the development of the MadJam '03 program. Operating independent of a lab space frees valuable resources for other summer programs, and increases flexibility when simultaneous activities take place.
- c) *Research hand-held music composition technologies and select the best platform*  
After evaluating a range of hardware platforms, The MadWaves MadPlayer™ was selected for its affordability, portability, and intelligently designed interface. The MadPlayer™ proved to be easy to use and culturally relevant to the students within the target age group of the program.
- d) *Create an innovative and comprehensive course of study that utilizes the MadWaves MadPlayer™, and is easily replicable and modular in its approach*  
By partnering with companies such as MadWaves Corporation ([www.madwaves.com](http://www.madwaves.com)) and Sony Digital Pictures, TheLCG created a state of the art curriculum and learning environment that answered the needs of MassImpact. This out of school program was three weeks long, repeated for a total of six weeks, and was designed to provide engaging learning opportunities for students.
- e) *Integrate Learning Through Music principles developed by NECM into a replicable, technology-based curriculum*  
The Learning Community Group is originating standards for LTMT curriculum design and program implementation. The Mad Jam '03 pilot provided an opportunity to implement and research an LTMT program within a controlled environment.
- f) *Create rubrics and assessment standards for action research*  
Action research is essential to TheLCG vision for learning communities. Rubrics and assessment schemes were built in to the curriculum to track student progress and growth. Researching the effects of the MadJam '03 through carefully designed rubrics is providing results that are being distilled and applied to future LTMT project plans at TheLCG.
- g) *Build a culminating event or final project into the program to facilitate the performance aspects of LTMT*  
This objective notes the importance of creating an original performance or artifact that serves as a final summation of the skills that the students have learned throughout the program. Compact Discs of the student's work can be obtained by emailing [support@thelcg.com](mailto:support@thelcg.com)

## **The Curriculum**

Keeping the above objectives in mind, TheLCG merged the following three elements listed below into a complete program: The LTM frameworks are design guidelines for LTMT curricula, the hardware and software make up the technology solutions that support the LTMT frame work, and the individual curriculum components outline the scope and define rubrics for assessment.

### **I. The Frameworks**

The Five Processes for learning<sup>3</sup> are the internal guidelines for LTMT curriculum development. These processes are common values between music and any other subject concentration.

- Listen: observe, discriminate, decipher, perceive, describe....
- Question: inquire, investigate, analyze, discover....
- Create: invent, transform, improvise, produce, compose....
- Perform: demonstrate, interpret, follow through, memorize, work with deadlines....
- Reflect: make connections, self-assess, establish goals, revise work....

### **II. Hardware and Software**

The technology components that were used in the Mad Jam '03 program were selected specifically for the way in which they support the five processes on the curricular level. The MadPlayer™ platform was selected for its portability, sound quality, user interface, recording capabilities, and unique AI component. MadWaves software environment and Sony Digital Picture's Acid Pro™ were used to connect the MadPlayers™ to TheLCG's proprietary Digital Media Studio (DMS) computer system for expanded editing and composition.

### **III. Curricular Components**

The program was structured around three weeks of instruction for a class size of ten students. The classes met for three hours in the morning and three hours in the afternoon. Each student filled out a data collection sheet, and was assigned an individual MadPlayer™ to work with throughout the course. The Mad Player served as a digital portfolio that chronologically saved all student work for later assessment and evaluation.

#### **a) Week I Summary: Introduction to the MadPlayer™**

- Hardware handling procedures and class rules
- Mad Player function overviews and demonstrations
- End of the week functions review and oral quiz

Assessment: Students were evaluated on how well they understood the functions of the MadPlayer™ through oral quizzes and spot demonstrations. Students with an advanced understanding were partnered with a student who was experiencing difficulty.

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<sup>3</sup> Information from <http://www.nec-musicined.org/exitpage-ltmover.html>

**b) Week II Summary: Learning Through Music and Technology**

- Overview of modern electronic music styles (i.e. Rap, Hip-Hop, House, Techno)
- Role of each Mad Player™ instrument in an ensemble setting
- Rhythm in music, overview of notation, rhythmic solfege, tempo, values, pattern construction, decoding
- Harmony in music, overview of vertical structure in music, pitch functions, harmonic role of each instrument
- Overview of composition, song form, structure
- Composition projects using the MadPlayer™

Assessment: Students were tested using a team game and a simple scoring system. Ten students were paired into five teams, and were asked to decode and perform rhythms, identify song structures, and identify shifts in harmony, tempo, and dynamics. Students were given individual daily composition assignments for performance at the end of class.

**c) Week III Summary: Final Projects**

- Composition of original lyrics for performance
- Recorded improvisation
- Final refinement of at least two songs for large performance and class CD project
- Review of saved and collected works
- Performance showcase at a public auditorium

Assessment: Students were evaluated upon completion of their final projects. Proficiency with rhythmic implementation, song structure, performance practice, and the use of the functionality of the Mad Player™ platform were evaluated. The students were also asked to showcase their work in chronological order, as saved to the smart media card in the Mad Player™. The final projects were presented in an auditorium concert setting, attended by parents and members of the community. Compact Discs of the performance can be obtained by emailing [support@thelcg.com](mailto:support@thelcg.com)

#### **IV. Outcomes**

The interface of the MadPlayer™ proved to be an exceptionally intuitive platform for the students, largely due to the ubiquity of the Nintendo™ handheld interface that permeates K-12 world culture. It was fascinating and rewarding to notice such effortless immersion among the students. The MadPlayer™ hardware proved to be an excellent entry point for musical exploration, matched equally well by the enthusiasm for the genres being explored. The children were very well behaved throughout the program, interacted respectfully and generously with each other, and offered up helpful support to peers when needed. The LTMT frameworks provided a strong curricular guideline, and it was impressive to see a high level of focus and sustainable concentration. When the final project outline included the possibility of drafting written text for performance (raps, song lyrics, etc...), the children reacted favorably, linking the experience of writing and composing to some of their favorite musical icons.

The MadJam '03 provided all students with a rich LTMT experience that included traditional music theory, digital music technology, and authentic music curriculum integration. Music created a level playing field for students, regardless of their previous musical experience or background. Technology enabled immediate feedback, and recordings served as a digital record of their progress and individual creativity. Learning Through Music reinforces other disciplines, and the MadJam '03 realized the frameworks with all the benefits that appropriately integrated technology provides.

The LCG is committed to innovation in LTMT curriculum development and design, and will work with clients to apply this unique approach to the core mission of their organization.