

"Teach, Learn, Evaluate" (TLE): A Computer-based Music-learning Tool Designed to Foster Musical Understanding, General Learning Skills, and Cross-cultural Understanding (Poster)

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Abstract

Video games occupy a key part of children's activities today (Lenhart, et al, 2008). While these games usually remain outside of school (Cain, 2004), this poster reports on the development of a computer-based music-learning tool, "Teach, Learn, Evaluate," designed to be used within the music education classroom. Developed by researchers at the Amir Institute for Social Integration, BIU, in collaboration with DP-Multimedia Information Design, the tool builds on music's innate attractiveness and positive impact on children's cognitive development and academic performance (Serafine, 1988, Catterall, 2002, Scripp, 2002, Hodges, 2005), as well as teachers' enthusiastic interest in revitalizing conventional approaches to teaching.

Keywords: Music education, Computer-based music exercises, Distance learning.

Administered Online and conceived as interactive, graphically attractive music tasks (Figure 1), the exercises are designed to promote musical understanding (Bamberger, 1991) and general learning skills (Feuerstein, et al, 1988, Portowitz, et al 2009) (Table 1), and to offer opportunities for implicit transfer to new learning contexts (Bamberger, 2001, 2003). In addition, the exercises foster inter-cultural awareness and tolerance by exposing children to a wide repertoire of music selections (Western, non-western, popular, art). Narrating the exercises, a friendly figure mediates between the child and the tasks, explaining terms, and conveying excitement and support.

The children's answers are transmitted in real time over the web to a central database where they are saved in personal "accounts". Teachers, as well as researchers, have access to the children's answers, allowing the program to function as part of an educational project or as a research tool. While generally administered individually, the exercises may also be used in group-settings.

Select Primary Objectives of the Program Include:

1. To enable children to engage in music education digitally, a medium strongly rooted in youth culture.
2. To involve children in an interactive, one-on-one learning environment, while enabling their teachers to monitor their progress and difficulties, and to better understand what they know about music and how they learn.
3. To promote expression of thought and language skills through enhanced vocabulary, understanding of multiple symbol systems, and involvement in creative exercises.

4. To promote an awareness of similarities and a tolerance of differences among children from different backgrounds, by establishing communication among children through Internet-based activities.
5. To involve children who normally do not have an opportunity to engage in in-depth music education, because of geographic or financial constraints.
6. To foster collaborative research amongst scholars throughout the world.



Figure 1. Screenshots from the “TLE” Program

Table 1. General Learning Skills Developed During Music Education

Cognitive Function	Attributes
Identifying patterns	<p>This function involves recognizing patterns or consistencies in the basic attributes and dimensions of an experience while change is taking place in others.</p> <p>Applied to music, it involves, for example, recognizing musical entities, despite the transformation of melodic or rhythmic motives.</p>
Holistic perception	<p>This function fosters creating connections between objects or events, by encouraging children to compare, organize and categorize, multiple pieces of information, with the intent of understanding and creating relationships among them.</p> <p>Applied to music, understanding large-scale organizing features, such as contrast, repetition and variation, enables children to recognize musical structures, as for example ABA and Rondo forms.</p>
Relating simultaneously to multiple sources of information and integrating them	<p>This function involves cognitive processes in which children learn to differentiate between and focus upon individual aspects of a complex phenomenon.</p> <p>During music lessons, children learn to differentiate among pitch, rhythm, dynamics and harmony, and then come to hear the often intricate and changing relations among them as a composition unfolds (Bamberger, 1991, Serafine, 1988).</p>
Self-regulation	<p>This function involves ‘thinking before doing’. It reduces impulsive behavior, and encourages children to think things through so as to avoid random behavior.</p> <p>Applied to music, learning to play an instrument alone or in a group fosters self-discipline and develops strategies that assist in promoting self-regulation (McPherson & Renwick, 2000).</p>

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