Maestros of Innovation: Leading the Fusion of Music and STEM from Prelude to Finale

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Abstract:

Integrating music with Science, Technology, Engineering, and Mathematics (STEM) creates transformative opportunities for students across all educational levels, from early childhood to higher education. By embedding music within STEM and vice versa, students can engage in a variety of meaningful STEAM curricular opportunities. Active music in STEM for STEAM range from sound engineering and physics to instrument design and the use of computing technology and makerspaces. Additionally, applications of sound beyond traditional music production, such as voiceovers and sound effects, are explored, along with the psychoacoustics of musical cognition. The research demonstrates how educational leaders, principals, superintendents, and higher education administrators, can employ distributive leadership to facilitate STEAM integration. The researcher draws on experiences as an instructional leader to showcase strategies for creating multipurpose curricular spaces that promote innovative, interdisciplinary, and transdisciplinary STEAM learning. The study also emphasizes the importance of forming inclusive partnerships with external business members, community stakeholders, parents, staff, and students to design and implement effective curricula. Through these collaborative efforts, educational leaders can ensure that all students have access to creative and engaging learning experiences that merge music and STEM from prelude to finale.

Keywords:

STEM, Music, Instructional leadership, Distributive leadership, Psychoacoustics.