

EFFECT OF MUSIC AS A PEDAGOGICAL TOOL ON STUDENTS' ACADEMIC PERFORMANCE AT THE FOUNDATIONAL STAGE

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Abstract

Music serves an educational and entertaining role in both play and learning experiences for primary children. Music activities create valuable opportunities for students to interact and communicate not only with their peers but also with teachers, contributing to their readiness for upcoming linguistic challenges. Through the use of music, children can broaden their vocabulary and cultivate essential conversational abilities, empowering them to articulate their thoughts and ideas effectively.

Objective: *The main objective of the study is to determine how music as a pedagogical tool affects the academic performance of students at the foundational stage.*

Method: *The study used a sample size of 100 and employed a simple random sampling method. It utilized two research questions and two hypotheses. The study followed an experimental approach, specifically a quasi-experimental design with a separate sample pretest-posttest format. Data analysis was conducted using the t-test statistic.*

Result: *The study's findings showed that students taught with music techniques performed better than those taught with traditional methods. There is a significant relationship between the use of music and academic performance, and students taught with music demonstrated more impressive results than those taught traditionally.*

Keywords: *Music education, child-centric pedagogy, Foundational stage*

INTRODUCTION

Education is a complex effort aimed at positively shaping students' behavior, a goal that can be achieved by emphasizing simplicity, effectiveness, engagement, and the attainment of desired outcomes. The foundational stage of education refers to the period typically covering ages 8 to 11, or grades 3 to 5. This stage is crucial for building upon the foundational skills that children developed in earlier years. During the foundational stage, children begin to engage with more formal academic learning, expanding their cognitive, social, emotional, and physical abilities, which will influence their further development and success in later years of schooling. At this stage, children's brains are still highly receptive to learning, though the focus shifts towards more structured academic concepts. Children continue to demonstrate curiosity, a desire to explore, and the ability to learn through interaction and hands-on activities. However, they now begin to tackle more complex ideas, such as language fluency, mathematical reasoning, and introductory scientific concepts. Skills like motor coordination, emotional regulation, and social understanding are further refined as they become more confident learners. These years also lay a stronger foundation for critical thinking, problem-solving, and creativity in more structured contexts. Recognizing the importance of this developmental period, education systems increasingly adopt a child-centric approach during the foundational stage. Learning environments and activities are tailored to meet individual student needs, ensuring that each child's interests, strengths, and learning pace are respected. This stage encourages active, participatory learning where children are actively engaged in exploring knowledge rather than passively receiving information. The emphasis is on experiential learning, where academic concepts are reinforced through play-based activities, creative projects, and hands-on experiences, all of which promote holistic development. According to the National Education Policy (NEP) 2020, the foundational stage is an essential part of the overall school education structure. It bridges the gap between the play-based learning of early childhood and the more formal academic learning of later years, ensuring children are well-prepared to continue their educational journey with confidence and curiosity. According to the National Education Policy (NEP) 2020, the school education system is structured into various stages, emphasizing the foundational stage of education as follows:

Table 1: Education-system-NEP-2020

Category	Description	Age Group
Foundational Stage	Early childhood education focusing on holistic development through play, music, and sensory experiences.	Birth to 8 years
Preparatory Stage	Transition from foundational to formal education, emphasizing play-based learning and emotional development.	3 to 8 years
Primary Stage	Introduction to formal education with a focus on basic literacy, numeracy, and critical thinking skills.	6 to 8 years
Middle Stage	Development of a deeper understanding of subjects and collaborative learning approaches.	11 to 14 years
Secondary Stage	In-depth learning in various subjects with a focus on skill development and preparation for higher education.	14 to 18 years

Music plays a vital role at the foundational stage because it is an engaging and accessible tool that supports this child-centered learning philosophy. Music provides a platform for children to express and understand emotions through melody, rhythm, and lyrics, fostering emotional intelligence from an early age. Music is universally appealing and allows children to express themselves, explore new concepts, and interact with others in a fun and enjoyable way. It provides a multi-sensory experience that involves listening, singing, movement, and sometimes even playing instruments. Listening to music has a notable impact on reducing anxiety and enhancing wellbeing among undergraduate students. Through musical activities, children can improve their language skills, develop fine and gross motor skills, enhance memory, and learn to cooperate with others. For example, singing nursery rhymes helps young children with language development by exposing them to rhythm, vocabulary, and sentence structures. Dancing or clapping along to songs strengthens coordination and physical development, while group musical activities promote social skills such as teamwork and sharing. Music also offers an emotional outlet, allowing children to express and understand their feelings, which is critical for their emotional well-being.

Overall, the foundational stage is a pivotal time for a child's development, and integrating music into education during this period aligns with the principles of child-centric education. By making learning enjoyable, interactive, and responsive to individual needs, music serves as a powerful pedagogical tool to foster cognitive, social, emotional, and physical growth in young children, laying the groundwork for lifelong learning and development.

RESEARCH QUESTIONS

The research questions are as follows:

- RQ1. How significantly does the use of music as a pedagogical tool influence the academic performance of students at the foundational stage?
- RQ2. How do the mean scores of students taught using music as a pedagogical tool compare to those taught using traditional methods?

HYPOTHESES

The hypothesis are as follows:

- H1. Music as a pedagogical tool does not significantly impact the academic performance of students at the foundational stage.

- H2. There is no significant difference in the mean scores between students taught using music as a pedagogical tool and those taught using traditional methods.

PURPOSE OF THE STUDY

The main objective of the study is to find out how the use of music as a pedagogical tool affects the academic performance of students at the foundational stage.

RATIONALE OF THE STUDY

The rationale for investigating the impact of music on the academic performance of primary school students stems from the need to explore innovative and engaging educational methods. Music, as an interactive and creative tool, can potentially enhance learning by making abstract concepts more accessible and stimulating students' auditory and emotional engagement. This study seeks to determine whether incorporating music into the curriculum can improve students' cognitive abilities, retention of information, and overall academic performance. By examining various subjects such as language arts, science, and social studies, the research aims to provide empirical evidence on the effectiveness of music in promoting a deeper understanding of content and fostering a positive attitude towards learning. Ultimately, this study aspires to contribute to educational strategies that support diverse learning styles and engage students in a more holistic and enjoyable learning experience.

LITERATURE REVIEW

Dr. Durgesh K. Upadhyay (2014) conducted a research study that underscores the strong connection between music and psychological well-being. His results indicate that music significantly contributes to improving mental health, enhancing emotional stability, and promoting overall psychological wellness. The study highlights the therapeutic benefits of music for stress relief and emotional regulation, advocating for its incorporation into psychological and wellness programs to achieve improved mental health results.

Erol Demirbatir, Ayhan Helvacı, Nilufer Yılmaz, Gulnihal Gul, Ajda Senol, and Nazan Bilgel (2013) conducted a study that revealed no statistically significant connections between socio-demographic characteristics and psychological well-being. Their findings indicate that factors such as age, gender, income, or education level do not directly affect an individual's psychological well-being, suggesting that personal or internal factors may play a more significant role than external socio-demographic conditions.

Creech, Hallam, McQueen, and Varvarigou (2013) discovered that listening to music can evoke positive emotions and plays a significant role in enhancing psychological well-being. Their study emphasizes music's effectiveness in emotional regulation and mental health enhancement, underscoring its therapeutic advantages in fostering psychological well-being in different contexts.

Nicola Sigg (2009) noted a relationship between various factors related to music preferences and specific dimensions of psychological well-being. The study implies that a person's musical tastes can affect their emotional state and general mental health, highlighting a connection between music preferences and overall well-being.

Petri Laukka (2007) discovered a significant association between music listening and psychological well-being, especially among older adolescents. The study offered important insights into how this age group incorporates music into their daily lives, indicating a potential link between musical engagement and enhanced well-being, and suggesting that music can play a therapeutic role in improving emotional and mental health.

DELIMITATION OF THE STUDY

Due to constraints in resources, the researcher had to limit the scope of their study to Moradabad district UP.

METHODOLOGY

This study utilized a quasi-experimental research design, specifically the non-equivalent pretest-posttest control group design. It involved two intact, non-randomized groups. Initially, a pre-test was conducted to assess the baseline abilities of each group. During the intervention, the experimental group received instruction on affective-related topics using music as a pedagogical tool, while the control group was taught the same topics using the traditional (chalk-and-talk) method. Following the intervention, a post-test was administered to evaluate and compare the academic performance of both groups. The study involved a sample size of 100 students. Schools were selected using a simple random sampling technique, and data was collected using the Academic Achievement Questionnaire (AAQ). Statistical tests were employed to evaluate the study's hypotheses.

RESULTS

RQ1. How significantly does the use of music as a pedagogical tool influence the academic performance of students at the foundational stage?

Table 1: Mean performance Scores and Standard Deviation of pupils Pre-test and Post-test.

Condition	Teaching Method	Test Type	Mean	SD	G. score	N)
Experimental	Music Technique	Post-test	21.03	7.43	12.92	50
		Pre-test	8.11	2.79		
Control	Traditional	Post-test	17.33	4.22	10.15	50
		Pre-test	7.18	2.08		
Total						100

Table 1: The study revealed that the mean achievement scores for pupils taught subjects using music and the traditional (chalk-and-talk) method were 8.11 and 7.18 in the pre-tests, respectively, indicating that the experimental group scored higher at the start of the experiment. Additionally, the mean achievement score for the experimental group in the post-test was 21.03 with a standard deviation of 7.43. The gain score for the experimental group was **12.92** (21.03 - 8.11). In contrast, the control group had a post-test mean achievement score of 17.33 with a standard deviation of 2.08 and a gain score of **10.15** (17.33 - 7.18). The difference in mean achievement gain scores between the groups was **2.77** (12.92 - 10.15), favoring the music technique. Therefore, there is a significant effect on the academic performance of students taught with music techniques compared to those taught with the traditional (chalk-and-talk) method, with the former achieving higher.

Table 2

RQ2. How do the mean scores of students taught using music as a pedagogical tool compare to those taught using traditional methods?						
Condition	Teaching Method	Test Type	Mean	SD	G. score	N
Experimental	Music Technique	Post-test	27.23	7.06	18.22	50
		Pre-test	9.01	2.49		
Control	Traditional Method	Post-test	17.01	5.38	10.00	50
		Pre-test	7.01	2.09		
Total						100

Table 2 displays the mean achievement scores of students from schools A and B in both the experimental and control groups. In the experimental group, where students were taught using music, the mean achievement scores were higher compared to those taught using the traditional chalk-and-talk method. However, the table does not indicate whether this difference is statistically significant. In the control group, taught using the traditional method, students from school A had a slightly higher mean achievement score than those from school B. Again, the table does not clarify whether this difference is statistically significant or if it may be attributed to error variance.

H1. Music as a pedagogical tool does not significantly impact the academic performance of students at the foundational stage.

Table 3: Analysis of Covariance (ANCOVA) for Students' Overall Achievement Scores Based on Teaching Method.

Source of Variation	Type III sum of source	df	Mean Square	F. Cal	P. value	Decision
Corrected model	1144.623	2	572.3115	9.533	0.001	S
Intercept	131212.101	1	131212.101	2186.843	0.000	S
Method	1144.623	1	1144.623	19.074	0.001	S
Error	13804.607	176	78.432			
Total	134014.002	180				
Corrected total	14949.23	179				

Table 3 indicates that the calculated F-value for the impact of teaching methods on student achievement is 9.533, with a P-value of 0.001, which is below the 0.05 threshold set for this study. Consequently, the null hypothesis, which posits that teaching methods have no effect on student achievement, is rejected. This result demonstrates that teaching methods significantly affect students' academic achievement. Additionally, there is a significant difference in the mean scores of students between the two groups: those taught using the music technique and those taught using the traditional (chalk-and-talk) method.

H2. There is no significant difference in the mean scores between students taught using music as a pedagogical tool and those taught using traditional methods.

Table 4: Analysis of Covariance (ANCOVA) of Student's overall Achievement Scores by Teaching Method.

Method	Mean	SD	N	Level of Significance	df	t-cal	T-tab	Decision
Music	3.98	0.3849	50	0.05	94	8.76	1.6606	Rejected
Traditional	3.50	0.3897	50					

Table 4 indicates that the calculated t-test value of 8.76, with 94 degrees of freedom, is greater than the critical t-table value of 1.6606 at the 0.05 level of significance ($t\text{-cal} = 8.76$, $t\text{-tab} = 1.6606$, $p < 0.05$). This result suggests a significant difference in the mean scores of students taught using the music technique compared to those taught using the traditional chalk-and-talk method. Therefore, the null hypothesis, which states that there is no difference in achievement between the two teaching methods, is rejected.

DISCUSSIONS OF FINDINGS

The study's results emphasized the significant impact of music techniques on students' interest and academic performance. Specifically, the achievement test scores revealed that students in the experimental group, who were taught using music-based methods, significantly outperformed those in the control group, who were taught using traditional methods. This performance gap can be attributed to the experimental group's exposure to music techniques, which facilitated a deeper understanding of the subject matter. In contrast, the control group, relying on conventional teaching methods, did not attain the same level of comprehension.

As a result, the use of music as an educational tool had a notably positive effect on students' academic achievement. The study showed that students taught with the aid of music performed better academically than those taught using traditional chalk-and-talk methods. This suggests that incorporating music into the teaching process can enhance student engagement and understanding, leading to improved academic outcomes.

Ultimately, the findings indicate that integrating music techniques into the curriculum can be an effective strategy for improving students' academic performance and interest in subjects. The experimental group's enhanced performance underscores the potential benefits of innovative teaching methods over conventional approaches, highlighting the importance of exploring and incorporating diverse pedagogical tools to enrich the educational experience and improve learning outcomes for students.

RECOMMENDATIONS

The following recommendations focus on improving academic outcomes by exploring the impact of music on cognitive abilities, teacher training, diverse learners, and students' emotional well-being:

- Future research could explore how different types of music (classical, folk, instrumental) impact cognitive functions like memory, attention, and problem-solving at the foundational stage.
- Investigating the effectiveness of teacher training programs in integrating music into early childhood curricula can offer insights into best practices and challenges in using music as a pedagogical tool.
- Studies could focus on how music as a teaching tool affects students with diverse learning needs, such as those with learning disabilities or from various socio-economic backgrounds.

- Future research might examine how music influences students' emotional regulation, social skills, and motivation, which in turn affect academic performance at the foundational stage.

CONCLUSION

Music techniques have proven effective in boosting students' academic achievements across various subjects. To meet educational goals at the foundational stage, it is recommended to prioritize child-centered methods like music over traditional lecture-based approaches. Traditional "chalk-and-talk" teaching methods have been shown to be less effective in improving student achievement. This study demonstrated that music techniques significantly enhance and sustain students' academic performance and interest. To engage and maintain students' interest, greater emphasis should be placed on using music techniques. Conversely, conventional lecture methods were found to be inadequate in raising academic achievement and sustaining student interest. Therefore, student performance is likely to remain low if conventional methods continue to be used. Teachers are encouraged to adopt music techniques, as this approach can help address the ongoing issue of poor student achievement.

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