

Multiplication Table Learning through Music and Rhythm and its Effect on Two Digits Multiplications and Divisions in Elementary Stage

Sanskriti Das

Department of Education, Satyapriyo Roy College of Education, under the WBUTTEPA University, Kolkata, West Bengal, India.

ABSTRACT

Music and mathematics are intertwined with each other since ancient times. Many musicians started to use many mathematical concepts deliberately in the elementary stage during the By pure mathematical knowledge pupils cannot enjoy the application of mathematics in 21st century. The effect of music on an acquisition of table learning help to achieve better marks in multiplication and division. On account of that a quasi-experimental study of six months was designed with a pre- and post-test. The Bengali medium primary school students of West Bengal named Adasimla no 2 primary school were selected as the participants of the study. The students had learned and practiced the table song every morning, based on raga "Bhairav" and "Tritaal". The data was analyzed through mean difference and t-test. The results reveal that the students who learned mathematical table learning through music and rhythm showed significant improvement in the acquisition of learning tables and achieved better marks in multiplication and division.

Keywords: Music, Mathematics, Right to Education, Bengali medium primary school.

Journal of Teacher Education and Research (2023). DOI: 10.36268/JTER/18203

INTRODUCTION

Many philosophers throughout history particularly Plato and Aristotle, laid stress on the relationship between music and mathematics. Music is intertwined with patterns of tone, on the contrary, mathematics is the cultivation of patterns. Since both compositions have an inclusive language, they have been connected with each other from the primitive age.

- "Every child is inwardly deeply musical". All tune are can be said that only a sequence of tone can be called music. Thus, music has a relation with law and rhythm of nature and eternal flux an order of the cosmos. Music enhances activity and it seems like a perfect instrument to cherish human cognition and what is more, it is a field of research that investigates the influence of, for instance, the "4E COGNITIVE SCIENCE" framework in music research by some authors. "4E" stand for embodied, embedded, extended, and enactive four ethics that challenge more conventional accounts of cognition (including musical cognition).

Mathematical table learning through music and rhythm help to increase memory and cognition. In our formal education, more emphasis are given on memorization and cognition only and simultaneously, music teaching in the elementary stage is losing its topicality and vogue. Mathematical table learning through music and rhythm can be effective by building by which drive learning multiplication and division to achieve better.

We mostly listen to the value of upholding students in developing 21st-century skills. 21st century skills are being added onto k-12 (from kindergarten to 12th grade), which alludes to the range of years of publicly supported primary and secondary educational curricula globally, often via accomplishing them into subjects such as math. The international conference "innovations for 21st century music educations and research" provided a timely opportunity to take stock of the latest developments in music education.

Corresponding Author: Sanskriti Das, Department of Education, Satyapriyo Roy College of Education, under the WBUTTEPA University, Kolkata, West Bengal, India., e-mail: sangsthitasanskriti496@gmail.com

How to cite this article: Das, S. (2023). Multiplication Table Learning through Music and Rhythm and its Effect on Two Digits Multiplications and Divisions in Elementary Stage. *Journal of Teacher Education and Research*, 18(2):9-11.

Source of support: Nil

Conflict of interest: None

Rationale of Study

For the COVID-19 pandemic, there are swift changes to transit, educational circumstances, job status, etc., especially on education. They could not give attention and focus on study in a formal 2020 COVID-19 traditional lectures and classes affected as learning moved online and students were accommodated with that method. So learners were not being motivated to be present to school. No child left behind (NCLB), in full no child left behind act of 2001, U.S. federal law aimed at prospering general primary and secondary schools via enraged responsibility for schools, school districts and states. It was the main law for K-12 general education in the United States from 2002-2015.

In India Government was making an attempt to confirm the admission and fulfilment of elementary education for all children between the ages of 6 to 14 years through the Right to Education act, from first April 2010(RTE Act, 2009). In spite of these efforts from the part of government there are large number of dropouts. Statistics transpired that, in the year of 2013-14, 48.1% of boys and 46.7% for girls had left the arena of the school at the secondary level(Govt. of India, 2014). N

Many students are now also struggling with achievements. The learners are not enjoying the teaching-learning process and are indifferent and bored in learning mathematics. So, their deficiency

Table 1: Pre Test and Post Test

	N	MEAN	SD	N	MEAN	SD	T value	Remarks
Control Group	E30	28.8	5.44	E30	33.73	8.07	2.78	Non significant
Experimental Group	E30	47.09	8.16	E30	61.03	8.48	7.33	Significant at 0.01 level

Table 2: Mean difference in achievement in two-digit multiplication and division

	Number	Mean	SD	Numbr	Mean	SD	T Value	Remarks
Achievement In Two Digit Multiplication and Division	29	68.27	9.66	36	52.63	8.02	8.23	Significant at 0.01 level

of actively taking part in the teaching-learning process is one of the main roots of these massive dropouts. Table learning through music motivates the students to learn and achieve better marks in multiplication and division.

Objectives

- To find out the study of the effect of musical rhythm on the acquisition of Multiplication table learning
- To find out the effect and rhythmic table learning on two-digit multiplication and division.

Hypothesis

H01: There is no significant relationship between musical rhythm and multiple-table learning

H02: There is no significant achievement scores of the of two groups on two digits multiplication and division

Sample of the Study

The venue for this research study was the primary school students of a bengali government-sponsored co-educational school of West Bengal. Sample of the study was drawn on the basis sampling by using a convenient sampling technique. Two groups are formed in which sample size are divided (the CG is formed by 30 students and EG by 30 also). The second study was also formed by two groups (the CG is 36 and EG by 29 students).

Tool Used

- Teacher makes a multiplication table learning tool with musical rhythm for the experiment.
- Criterion-referenced achievement test is used for of arithmetical fundamentals of two digits multiplications and is a standardized (teacher-made) achievement test. These consisted 10 two-digits multiplications and also 10 two and each number was 5 and the total number was 100.

Design of the Study

The research carried out refers to and of Quasi design. The purpose is to evaluate multiplication table learning through music and rhythm before and after the invention of teachers and its effect on two-digit multiplication and groups in which sample is divided(the CG formed by 30 students and EG by 30 also).The second study is also formed by two group(the CG is 36 EG by 29 students) by only. In order to obtain data same contents were worked on both groups to verify the academic achievements.

Findings

The means and standard deviation (SD) and "t" value for each pre and for multiplication table learning are summarised in table 1.

(MEAN, SD, "t" value of multiplication table learning score for experimental and control group pre-post-test)

H01: There is no significant relationship between musical rhythm multiply table learning

The result of Table 1 informs about the pre-test and post-test of the students of the control group and experimental group. The total score which be turned out by both group pre and post-test were respectively in the control group 864 and 1012 and also in the experimental group 1460 and 1892 and t value of the control group is 2.78 and the experimental group is 7.88, which is significant at 0.01 level so, null hypothesis is rejected.

H02: There is no significant difference between two groups of achievement scores of two group on two-digit multiplication and division.

MEAN,SD," t" VALUE OF Achievement score in two digit multiplication and division in experimental and control group at post test .

Table 2 shows that, the mean difference in achievement in two-digit multiplication and division is 15.64. This indicates that the experimental group has scored more than the control it is an indicator of improvement in the performance by the experimental over control. The calculated 't' value also shows that this difference is statistically nonsignificant, so null hypothesis is rejected.

Introspection

Music is one of the initial route where kiddies are acquainted with math. Without thought, our organs respond to music. When we rock to our along even to look towards the source of sounds, the infant can respond and the mathematical law behind it. For improving mathematics, music can be used. Math through music is on a mission to excite. For a proper understanding of numeracy, we can use music and rhythm to make it more enjoyable.

Significance

Beat is related to every musical rhythm and by clapping or tapping toe we respond in every rhythm. Our heartbeat also have a tune and proper rhythm.

Accentuating the steady beat by clapping or moving to music helps children's development of one to one correlation.

In the time of singing a song, we focus on the rhythms that fall on the beat. Clapping on each get better at this, can add rhythm to helps children to identify one to one able to recognize rhythmic pattern helps children to recall the words to a song.

The movement from one note to another is a melody of the can be used to recognize patterns, such as how notes are returned within a song.

CONCLUSION

This study's preliminary evidence supports the effectiveness of the music and rhythmic(MR) tool in multiplication table learning at a



Bengali Medium Government-sponsored school in west Bengal. But in this study small samples are used and narrows the implementation of music and rhythmic tool within one school which may guides to the inconsistency of the findings. Future studies for finding the effectiveness of music and rhythmic tool in multiplication table learning in another setting should be designed keeping this limitation in mind.

ACKNOWLEDGMENT

The authors would like to thank Professor Dr. Bikash Pal for his expert advice and encouragement throughout this difficult project.

REFERENCE

- Eren, B. (2004), Therapetic use of instrument Training with a child with ,
Journal of education and practice, 23,22-35.
- Koen, B. (2014), Beyond the roof of the world, Music,prayer,and healing in the
pamir mountains,Journal of society for ethnomusicology58, 156-159
- Jatmiko,J.and Vitasmore, P. (2018), The impact of listening music fr students
vocabulary mastery, Annual conference of social science and
humanties, 64-66
- Kelly, M. (2019), Google, Teaching students who have Musical Intelligence
- Singh, M. (2021) ,Music and dyslexia Book, 85-116
- Brownell, M. (2017), Music education and 21st century skills

