

Influence of Music Training on Academic Achievement of School Children

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Abstract: *Music is present across cultures all over the world. The benefits of music are unknown to many. Academic achievement is another concept which shows the end result of the education. Although music is considered soothing, calming, and refreshing, few are aware that music has the power to boost cognition and learning. The present research was envisaged to study the influence of music training on academic achievement of school children. The research was carried out in six phases. A self-structured tool was used for data collection. The sample comprised one hundred and thirty respondents who received music training along with their schooling and one hundred and thirty respondents who did not receive music training along with their schooling in the age range of 14-16 years. The data collected was organized, tabulated and analyzed with appropriate statistical analysis. The findings of the research indicated that there was no statistically significant difference in the academic achievement of the respondents in the two study groups. However the respondents from music study group reported the benefits of memory, study skills and performing skills from music training.*

Keywords: Music Training, Academic achievement, School children.

1. Introduction

Music-“Sangeet” is a technical term used for vocal and instrumental music along with the art of dancing. These three fine arts are closely related with one another in such a way that it is almost impossible to separate them. Music is considered soothing, calming, and refreshing. Vocal and instrumental music affects the brain through the ears, whereas dancing appeals to the eye as well. According to Howard Gardner (1983) Music is a way of knowing, music intelligence is equal in importance to logical intelligence, mathematical intelligence and linguistic intelligence.

Academic achievement or performance is the outcome of education, the extent to which a student, teacher or institution has achieved their educational goals. Music performance is one of the most complex and demanding cognitive challenges. Music training and academic achievement have enthused many western researchers to conduct scientific studies. In India, there is a dearth of research studies on the correlation between music training and academic achievement. Hence the present study concentrates on the association between music training and academic achievement of school children.

2. Methodology

Aim: To study the influence of music training on the academic achievement of school children

Objectives

- To study the pattern of academic achievement of the respondents who had received music training along with their schooling.

- To study the pattern of academic achievement of the respondents who had not received music training along with their schooling.
- To compare the academic achievement between respondents who had received and who had not received the music training.

Hypothesis

- Music training will not have a positive effect on academic achievement of respondents.
- There is no significant difference in the study habits among the respondents of academic study group and music study group.

Procedure

Phase 1: Identification of problem

By the extensive review of literature, the researcher came to know that there is a link between music learning and concentration, memory, brain development and cognition especially during school years. All the above aspects are interlinked with academic achievement. Therefore the current research was under taken for the study.

Phase 2: Development of appropriate tools

An exhaustive review and survey was done to check the availability of the standardized tools for the study. Since there were no such tools available, self structured Likert scales were developed by the researcher on academic achievement and study habits, music training and self concept for the purpose of data collection. All three scales were validated by subject experts.

Phase 3: Sample selection

The Northern part of Karnataka mainly Gadag, Dharwad, Hubli are very well known for its contribution to the field of Hindustani music throughout India. Two hundred and sixty

high school boys studying in the following two schools comprised the sample for the present study:

- 1) Music training: Sri Veereshwar Punyashram, Gadag
- 2) Academic: Sri Tontadarya High school, Gadag

Sri Veereshwar Punyashram, Gadag, the school selected for music training is a renowned school for music training and it also provides residential schooling from primary school till under graduation courses. The school was started by Pandit. Panchakshari Gavayi, one of the legends of Hindustani classical music. Initially it was started for the blind children now it is also open for normal children. Respondents with at least 5 years of music training were selected. Both the schools were selected so as to match the socio-economic condition of the respondents and to maintain the homogeneity in the study.

Phase 4: Pilot study

The tool developed by the researcher was administered to 10% of the total sample to check the reliability of the tool. Some of the questions were modified and the final version of the questionnaire was prepared after discussion with subject experts.

Phase 5: Data Collection

Prior to the data collection, permission from the concerned school management was sought by the researcher in a formal manner. The tools were translated into kannada to facilitate data collection. The researcher explained the statements to the respondents in their local dialect, so that the respondents need not to get confused or feel difficult to understand or respond to any item of scale. Data collection continued for three days and throughout this period researcher was with the respondents to clarify their doubts. All precautions were taken at the time of data collection so that there were no questions/statements left unanswered and the respondents understood the questions/statements were clear.

Phase 6: Statistical analysis

The study design was a comparative two group experimental study. The data collected was systematically tabulated and suitable statistical analysis was done. Descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean \pm SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance.

Statistical software: The Statistical software namely SAS 9.2, SPSS 15.0, Stata 10.1, MedCalc 9.0.1 ,Systat 12.0 and R environment ver.2.11.1 were used for the analysis of the data

and Microsoft word and Excel have been used to generate graphs, tables etc.

3. Results and Discussion

The age range of respondents was between thirteen to seventeen years. Hundred and thirty students studying in Sri Tontadarya High school, Gadag comprised the academic study group. Another hundred and thirty students of Veereshwar Punyashram, Gadag comprised the music training group. The music training group had received a minimum of 5 years music training. Both the study groups comprised of only male respondents. Socio-economic status of the respondents were matched to ensure homogeneity. The educational profile of the respondents was matched to control the errors in the study. The two groups of respondents were found to be statistically similar with $P=0.647$. The data of the present study is represented below.

Table 1: Percentage Scored in the Previous Academic Year by the Respondents

Percentage in previous academic year	Academic study group		Music study group		Total	
	No	%	No	%	No	%
<50%	1	1	2	1.5	3	1
50%-90%	126	97	126	97	252	97
>90%	3	2	2	1.5	5	2
Total	130	100	130	100	260	100

$P=0.692$, Not significant, Fisher Exact test

With respect to percentage scored in the previous year, majority of the respondents (97%) of the academic study and music training groups had scored between 50-90 percent in their previous qualifying exam. The performance of the respondents was observed to be uniform irrespective of their music training.

Validation of the hypothesis

Null hypothesis: Music training will not have a positive effect on academic achievement of respondents.

Alternate hypothesis: Music training will have a positive effect on academic achievement of respondents.

Fischer Exact test was used to analyze the results. Based on the result of the statistical analysis presented in Table-1, the null hypothesis which states that music training will not have a positive effect on academic achievement of respondents was accepted.

Table 2: Comparison of Study Habits among Respondents in the Two Study Groups

Dimensions	Academic Group	Music Group	Total	P value
1. I attend classes regularly.	4.78 \pm 0.68	4.78 \pm 0.69	4.78 \pm 0.68	0.928
2. I think science is an interesting subject.	4.58 \pm 0.79	4.59 \pm 0.77	4.59 \pm 0.78	0.937
3. My favorite subject is social science.	4.34 \pm 1.23	4.38 \pm 1.13	4.36 \pm 1.18	0.753
4. I like to do home work given at school.	4.42 \pm 0.98	4.48 \pm 0.94	4.45 \pm 0.96	0.606
5. My family members help me in my studies.	3.54 \pm 1.55	3.66 \pm 1.60	3.60 \pm 1.57	0.528
6. Mathematics is a very difficult subject for me.	2.80 \pm 1.61	2.78 \pm 1.62	2.79 \pm 1.61	0.908
7. I feel languages are very difficult to study.	3.29 \pm 1.60	3.35 \pm 1.64	3.32 \pm 1.62	0.789
8. Every day I spend minimum of 2-4 hours on studying.	3.81 \pm 1.44	3.74 \pm 1.52	3.77 \pm 1.48	0.706
9. I like to be creative in my work.	4.00 \pm 1.25	4.22 \pm 1.11	4.11 \pm 1.19	0.144
10. I read text books for studying.	4.30 \pm 1.09	4.31 \pm 1.08	4.30 \pm 1.08	0.954

11. I do not refer to other study materials.	2.41±1.54	2.62±1.62	2.52±1.58	0.273
12. I prefer to study regularly for my exams.	4.22±1.22	4.35±1.17	4.28±1.19	0.407
13. I prefer to study during exams.	3.65±1.57	3.58±1.60	3.61±1.58	0.725
14. I attend private tuitions.	3.27±1.58	3.12±1.63	3.20±1.61	0.465
15. I prefer to study by writing down by recalling.	3.84±1.52	3.69±1.59	3.77±1.56	0.450
16. I prefer to study by memorizing.	4.24±1.24	4.28±1.18	4.26±1.21	0.759
17. I prefer to study by repeated study.	3.75±1.58	3.52±1.61	3.63±1.60	0.229
18. I prefer to study by group study.	4.01±1.44	3.91±1.51	3.96±1.47	0.585
19. I feel I can achieve more in my studies.	4.28±1.25	4.40±1.16	4.34±1.21	0.441
20. I feel very tense during exams.	2.34±1.40	2.25±1.38	2.30±1.39	0.624
21. I am not satisfied with my academic performance.	2.32±1.52	2.35±1.56	2.33±1.54	0.841
22. I am interested to pursue higher education.	4.43±0.92	4.52±0.91	4.48±0.92	0.417
23. I have good memory.	4.25±1.15	4.28±1.20	4.27±1.17	0.792
24. I prepare time table for studying.	3.57±1.64	3.69±1.65	3.63±1.64	0.547
25. I approach my teachers whenever I have doubts.	4.08±1.45	4.25±1.35	4.17±1.40	0.353
26. I complete my assignment in time.	3.99±1.39	4.00±1.39	4.00±1.39	0.964
27. I take lot of interest in class projects.	4.32±0.99	4.28±0.96	4.30±0.97	0.751
28. I like take part in class competitions.	4.47±0.88	4.54±0.80	4.50±0.84	0.508

In the present study, the study habits of the respondents were elicited using a likert scale designed by the researcher. The scale consisted of twenty eight statements pertaining to study habits. The responses of the two study groups were statistically analysed and compared. However, the statistical analysis revealed that there was no significant difference between the study habits of the respondents belonging to the two study groups.

Validation of the hypothesis

Null hypothesis: There is no significant difference in the study habits among the respondents of academic study group and music training group.

Alternate hypothesis: There is a significant difference in the study habits among the respondents of academic study group and music training group.

Standard deviation test was used to analyze the results. Based on the result of the statistical analysis presented in Table-2, the null hypothesis which states that there is no significant difference in the study habits of the respondents of academic study group and music study group was accepted.

Table 3: Scores obtained by respondents of music study group on the music training scale

S. No	Scores obtained by the respondents	Respondents	
		No	%
1	60-70	8	6
2	70-80	6	5
3	80-90	51	39
4	90-100	62	48
5	100-110	3	2
	Total	130	100

The above table shows the results of obtained scores of the respondents for evaluation on items on music study group. It shows that majority (48%) of the respondents belong to the range of 90-100points, closely followed by 39 percent of the respondents who belong to 80-90 points group. Only 6 percent of the respondents belonged to 60-70 points group. The group with 70-80 points had 5 percent representation and the group with 100-110 point groups had the least representation with 2 percent.

The above results indicate that majority of the respondents in the music study group were highly motivated to learn music. The 2 percent representation observed in the higher range of 100-110 points group may indicate highly gifted musical talent.

4. Conclusion

In the modern era classical music is not getting due recognition though the benefits of this form of music are several. Although many western research studies have shown that music has an influence on the brain development, little research has been conducted in India to clarify such effects.

In the present research, the influence of music training on the academic achievement of the respondents was not found to be statistically significant. However, the respondents in the music study group reported that they experienced the good memory and academic skills after learning music. Hence music training is a form of cultural capital that seems to provide cognitive and social tools that help students successfully navigate the educational terrain. The true nature of the association between music training and academic achievement can be clarified only by future longitudinal research.

References

- [1] Bandoypadyaya Shripada, (2007), 'The music of India', Pilgrims Publishing, Varanasi. pp 1-5.
- [2] Fujita K., (2014), 'The effect of extracurricular activities on the academic performance of junior high students, Undergraduate Research Journal for human science.
- [3] Hallam Susan, (2010), 'The power of music: Its impact on the intellectual, social and personal development of children and young people', International Journal of Music Education, Volume 28(3), pp 269–289.
- [4] Schellenberg, G. E, (2004), 'Music Lessons Enhance IQ', The online version of this article can be found at: DOI: 10.1111/j.0956-7976.2004.00711.x, Psychological Science 2004 15: 511.
- [5] Schlaug Gottfried, Norton Andrea, Overy Katie, Winner Ellen, (2005), 'Effects of Music Training on the Child's

- Brain and Cognitive Development', Annals of the New York Academy of Sciences, Volume 1060, pp 219-30.
- [6] Young N Laura., Fujita Kimiko, Cordes Sara, Winner Ellen, (2013), 'Arts involvement predicts academic achievement only when the child has a musical instrument', Department of Psychology, Boston College, Chestnut Hill, MA, USA.