

How to Cite:

Vadivukarasi, P. M., & Gnanadevan, R. (2022). Influence of multiple intelligence on the academic achievement of higher secondary students. *International Journal of Health Sciences*, 6(S5), 7271–7276. <https://doi.org/10.53730/ijhs.v6nS5.10332>

Influence of multiple intelligence on the academic achievement of higher secondary students

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Abstract---The present study aimed to find out the influence of various dimensions of multiple intelligence on the academic achievement of higher secondary students. Survey method with stratified random sampling technique has been followed for the present study. Multiple intelligence scale standardized by Surbhi Agarwal and Suraksha Pall (2016) has been adapted for the present study to measure the multiple intelligence of higher secondary students. The academic achievement of the students was measured through the marks obtained by the selected higher secondary students in their school examination. The total sample consists of 679 higher secondary students which includes 382 male and 297 female higher secondary students. In the light of the analysis and interpretation of data, the study revealed that there is a significant contribution of various dimensions of multiple intelligence on the academic achievement of higher secondary students. It further revealed that 28.9% of the total variance in the academic achievement is attributed by various dimensions of multiple intelligence.

Keywords---students, multiple intelligence, academic achievement.

1. Introduction

Multiple intelligence refers to a theory describing the different ways a student learns and acquires information. These multiple intelligences range from the use of words, numbers, pictures and music to the importance of social interactions, introspection, physical movement and being in tune with nature. According to Gardner (1999), all human beings possess all different intelligences in varying degrees and each individual manifests varying levels of these different intelligences and thus each person has a unique 'cognitive profile'; that is, all human beings possess all different intelligences in varying amounts; each

individual has a different composition; different intelligences are located in different areas of the brain and can either work independently or together; by applying multiple intelligence we can improve the academic achievement of the students.

2. Need and importance of the study

In the present context it is felt that in India academic achievement is the outcome of training imparted to a student by the teacher in school situation. The present study has great significance for students and teachers in providing the necessary impetus to actively improve their multiple intelligence which actually enhance the academic achievement of the students. In many researches, it was found that the implementation of multiple intelligence theory in their teaching and learning had a positive impact and students gained self-confidence and motivation (Greenhawk, 1997; Haley, 2001; Kazu, 2009) throughout their learning process. According to Heikkinen et al. (1985), teachers themselves have a preferred method in perceiving and processing information and it is logical that teachers will communicate and teach their subject matter that is most compatible with their learning style. The multiple intelligence classrooms provides the environment for teachers to use varied teaching strategies, integrated curriculum and authentic assessment to provide creative and active learning that engages all students in the construction of their own meaning (Stanford, 2003). The study conducted by Koura and Hebaishi (2014) explored that there is a significant correlation found between multiple intelligences and achievement in specific language skills and language aspects. Raissi and Zainali (2016) found out that moderate inter-correlation exists between verbal-linguistic and visual-spatial intelligences and academic performance achievement. Multiple intelligences such as logical-mathematical, visual-spatial, verbal-linguistic, intrapersonal, bodily-kinaesthetic, interpersonal and naturalistic have a significant positive relationship with academic performance of students. It became clear that multiple intelligences like visual-spatial, verbal-linguistic and interpersonal statistically significant and were able to predict academic performance, whereas musical intelligence was a negative predictor for academic performance achievement of students. Eraslam and Ali (2016) explored that the multiple intelligence was found to affect success and permanence of 8th grade students. The various researches conducted both in India and other countries indicate that the multiple intelligence factors are significantly correlated with the students' academic achievement.

The present study will be useful for students as well as teachers, because the knowledge of the factors under study will enable the teachers and policymakers to plan teaching and learning process keeping in view of these factors. The present study will provide an insight to the parents to deal effectively with their children, so that they will be able to develop an understanding of the importance of multiple intelligence to enhance the academic achievement of higher secondary students. Based on the above discussion, the investigator felt it necessary to do the present research.

3. Objective of the Study

The objective of the study is to find out the influence of various dimensions of multiple intelligence such as, existential intelligence, interpersonal intelligence, logical intelligence, intrapersonal intelligence, linguistic intelligence, bodily/kinesthetic intelligence, spatial intelligence, musical intelligence and naturalistic intelligence on the academic achievement of higher secondary students.

4. Method of Study

Survey method is a method for collecting and analysing data, obtained from large number of respondents respecting specific population collected through highly structured and detailed tool. This method is useful for development studies where the current problems and described at present. Hence, survey method has been employed for the present study. Multiple Intelligence Scale standardized by Surbhi Agarwal Suraksha Pal, (2016) has been used to measure the multiple intelligence of higher secondary students. It includes the nine dimensions of multiple intelligence such as, existential intelligence, interpersonal intelligence, logical intelligence, intrapersonal intelligence, linguistic intelligence, bodily/kinesthetic intelligence, spatial intelligence, musical intelligence and naturalistic intelligence. The marks obtained by the students in their school examination have been taken to measure the academic achievement. For the present study eleven schools in the Vellore District of Tamilnadu have been selected randomly by lottery method to collect data. For the selection of the sample from the selected schools, stratified random sampling technique has been followed. The total sample consists of 679 students which include 382 male and 297 female higher secondary students.

6. Result and Discussion

Regression analysis has been carried out to find out the influence of various dimensions of multiple intelligence on the academic achievement of higher secondary students and the result of the analysis is presented in table- 1 and 2.

Table - 1
Anova for Contribution of Various Dimensions of Multiple Intelligence on the Academic Achievement of Higher Secondary Students

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22590.207	9	2510.023	30.210	.000 ^a
	Residual	55584.889	669	83.087		
	Total	78175.096	678			

Predictors: (Constant), Existential Intelligence, Interpersonal Intelligence, Logical Intelligence, Intrapersonal Intelligence, Linguistic Intelligence, Bodily/Kinesthetic Intelligence, Spatial Intelligence, Musical Intelligence, Naturalistic Intelligence.

Dependent Variable: Academic achievement

It is evident from the table-1 that the F value is found to be 30.210, which is significant at 0.05 level. It indicate that there is a significant contribution of various dimensions of multiple intelligence on the academic achievement of higher secondary students.

Table - 2
Model Summary for Contribution of Various Dimensions of Multiple Intelligence
on the Academic Achievement of Higher Secondary Students

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.538 ^a	.289	.279	9.11518

Predictors: (Constant), Existential Intelligence, Interpersonal Intelligence, Logical Intelligence, Intrapersonal Intelligence, Linguistic Intelligence, Bodily/Kinesthetic Intelligence, Spatial Intelligence, Musical Intelligence, Naturalistic Intelligence

Dependent Variable: Academic Achievement

The table-2 shows the R square value and it is found to be 0.289. It is evident that there is 28.9% of the total variance in the academic achievement is attributed by various dimensions of multiple intelligence such as, existential intelligence, interpersonal intelligence, logical intelligence, intrapersonal intelligence, linguistic intelligence, bodily/kinesthetic intelligence, spatial intelligence, musical intelligence and naturalistic intelligence of higher secondary students.

Conclusion

In the light of the analysis and interpretation of data revealed that there is a significant influence of various dimensions of multiple intelligence on the academic achievement of higher secondary students. It further revealed that 28.9% of the total variance in the academic achievement is attributed by various dimensions of multiple intelligence. Hence, it is quite clear that the various dimensions of multiple intelligences should properly be inculcated or improved in the students to achieve more and more in the academic achievement and life success. Moreover, the relationship of multiple intelligence with academic achievement will help the educationalist to make the curriculum of students accordingly. An earnest effort should be made by the practitioners to change the curriculum to a certain level at least and be redesigned according to the multiple intelligence. Home environment, parental care and support can also play an important role in improving the academic achievement of the learners through polishing multiple intelligence.

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