

Effectiveness of Multi-Sensory Learning Approach on Academic Performance of Slow Learners Among School Age Children

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Article History

Received: 18.02.2025

Revised: 21.03.2025

Accepted: 05.04.2025

Published: 10.04.2025

Abstract: **Background:** Today's kids are tomorrow's adults, and only effective learning can make this assertion true. Learning is regarded as a skill, both within and outside the classroom. Learning comes naturally to most children as they grow through their school years. Children with inadequate learning skills are at a disadvantage when compared to children who can deal with the typical learning system. These children typically drop out of school or are rejected by the system, causing parents to be concerned. Multisensory instruction is a sort of remedial intervention that has been utilized to enhance the learning abilities of slow learners across all age groups. This inspires the researcher to focus on this field of research with the goal to enhance slow learners' academic achievement. **Objectives:** To assess the effectiveness of multi-sensory learning approach on academic performance of slow learners among school age children in government higher secondary school, Namandi, Kanchipuram. **Design and Methods:** Quantitative pre-experimental one group pre test and post test design was adopted for this study. The sample size was 60 school age children with low learning ability and selected by using purposive sampling technique. The data was collected by using demographic variables and academic achievement rating scale, analyzed by using descriptive and inferential statistics. **Results:** The study results revealed that in experimental group, during pretest, 60 (100%) of samples were having low level of academic performance that is there score was less than 40 marks. During post test 40 (66.7%) samples academic performance was in occasional category, 19 (31.7%) academic performance was pretty well and 1 (1.6%) academic performance was rarely well and none of them was under low performance. The calculated t value of the experimental group was 37.8 which show the multi sensory learning approach was effective in improving academic performance among slow learners. There was no significant association between the academic performances of slow learners with their selected demographic variables. **Conclusion:** According to the study, the multisensory learning approach was effective in improving academic performance of slow learners among school age children. It is proposed that nurse educators should collaborate with the policy makers in the education department to develop policies and implement training programmes for teachers and parents on factors influencing slow learning and importance of multisensory learning approach to enhance academic performance among slow learners.

Keywords: School age children, Slow Learners, Academic Performance, Multisensory Learning Approach.

INTRODUCTION

"The capacity to learn is a gift; the ability to learn is a skill; the willingness to learn is a choice." – Brian Herbert

Healthy children are not just assets, but also the cornerstone for a robust and successful country. They are always in the process of growing and developing. A country's most significant resource is its children, and when they are healthy both intellectually and physically, they have a better chance of succeeding in all facets of life. Parents and instructors play a crucial role in how a child develops their personality.¹

A person's education is a crucial aspect of their life. It is essential to future success and a wealth of options in our lives. For people, education has various benefits. Education in a subject area enables people to think, feel, and act in a way that supports their success and raises both their level of personal happiness and that of their

community. Furthermore, education shapes people's personalities, thoughts, and interactions with others, as well as preparing them for life experiences. A excellent education can lead to a successful career, a high social status, and increased self-assurance, among other advantages.²

Everyone develops at their own pace, and this proverb couldn't be more true. Students come in all shapes and sizes, and their ability to acquire and comprehend new information is no exception. Slow learners, reluctant learners, and quick learners are the three types of learners. Slow learners may struggle academically whereas reluctant learners may lack interest or ambition to study. Quick learners, on the other hand, have good analytical skills and can assimilate material more quickly.³

Slow learners (SL) are those who acquire basic academic abilities at a slower and deeper rate than their peers their

age. For the required achievement, this student requires longer time, a higher rate of repetition, and additional resources from school and home. In addition, slow learners are children with specific needs, not disabilities.⁴

Assuming that every behavior has a reason and meaning, the behavioral traits of SLs are caused by some elements that are present either inside or outside the child. These several reasons could be psychological (inadequacy, anxiety, lack of confidence, and past failure), environmental (classroom administration, family concerns including poverty and illiteracy), or personal (chronic illness, physical flaws, low cognitive development).⁵

SLs have a short attention span, are incapable of retaining learning tasks, and learn slowly. They frequently exhibit antisocial traits such as aggressive, erratic, and immature behavioral attitude. Language, visual-motor, and auditory problems are more frequently exposed. Mindset and beliefs greatly influence learning, which results in lack of focus and delayed learning. Most SLs are delicate and innocent, with weak concentration abilities.

They always sought to work independently, without interruption, which left them unable to learn new things on their own.

They lose track of time in this way, don't show any interest in setting long-term goals, and ultimately miss out on the opportunity to learn new abilities. SLs detest schooling, have terrible linguistic skills, are baffled and in a depressed mood. They are unable to handle complex and multifaceted learning issues.⁶

The growth of kids with special needs depends on learning. Slow learners, who fall under the special needs category, suffer from great timidity, which prevents them from participating fully in class activities. As it influences their academic success, it is crucial that they participate actively in the learning activities.⁷

Teachers will encounter a wide range of child differences during the learning process, such as kids who are slow to retain information.

A slow learner is not a youngster who is stupid. Children that are slow learners only have slight delays in learning and teaching compared to other kids. This is brought on by misperceptions of children, emotional problems, and educational mistakes.⁸

It can be difficult to teach reading to children who are slow pace readers. It requires a personalized touch that may provide reading materials that are appropriate for different slow learners' prior knowledge, requirements, and preferences.

The prime role of teacher is to identify the SL in the class, design proper evaluation chart, highlight the factors and

implement relevant strategies to defeat it. All SLs do not follow the same approach, a good teacher utilized multi-strategies in every stage that attract and maintain the interest of SLs. Developing tailored reading content for slow learner children is one way of meeting the requirement for slow learner children in reading with the purpose of catering to slow learner reading issues. By providing personalisation of reading for slow learner youngsters, it may be a fascinating tool for a slow learner to use in order to successfully break a reading code.⁹

To improve the academic performance of SLs, repeated criticism, remedial training, and improved learning materials are needed. Therefore, by adopting some modified and remedial teaching practices, students can be trained and encouraged to thrive.

To overcome the misery and personal inadequacies that are results of serious educational and social failures, they required the special attention of parents and instructors. In order for slow learners to succeed as academically and socially mature members of society, teachers must carry out duties such as boosting their self-confidence, determining the primary cause of their poor performance, providing extra time and attention, setting up special learning resources, maintaining cumulative records, repetition, peer tutoring, and encouragement.¹⁰ Multi-sensory materials are particularly effective for slow learners.

These resources engage multiple senses simultaneously, thereby enhancing the learning experience. For instance, using textured letters for teaching alphabets or colorful, manipulative blocks for teaching mathematical concepts can stimulate both visual and tactile senses. Such an approach not only helps to maintain students' interest but also supports better retention of information. Slow learners often benefit from structured and sequential learning materials that present information in a structured manner.

Workbooks, textbooks, and digital content that break down complex topics into smaller, manageable units can be extremely useful. These materials allow students to gradually build on their understanding, thereby reducing feelings of overwhelm and frustration.¹¹

The researchers felt it was essential to identify slow learners among school-age children so that early intervention strategies like the multisensory learning method might be utilized to improve their academic performance and attain appropriate learning

PROBLEM STATEMENT:

A study to assess the effectiveness of multi-sensory learning approach on academic performance of slow

learners among school age children in Government Higher Secondary School, Namandi, Kanchipuram

OBJECTIVES:

The objectives of the present study were as follows

1. To assess the academic performance of slow learners before multi-sensory approach
2. To find out the effectiveness of multi-sensory approach on academic improvement of slow learners among school age children.
3. To find out the association of academic performance of slow learners among school age children with selected demographic variables.

RESEARCH HYPOTHESIS:

- RH₁: There is a significant difference in the academic performance of slow learners among school age

children before and after using multi-sensory learning approach.

- RH₂: There is a significant association between the academic performance of slow learners among school age children after using multi-sensory learning approach with selected demographic variables.

METHODOLOGY:

Quantitative, pre experimental, one group pre test post test design was used for the present study. The study was conducted at Government Higher Secondary school, Namandi. The study population was school age children between the age group of 6-12 years. 60 school age children were selected by using purposive sampling technique. The inclusion criteria were school age children between the age group of 6-12 years with below average marks; those who were present at time of data collection. The exclusion criteria were school age children who were absent and not willing to participate in study. The selected independent variable was multi sensory learning approach and dependant variable was academic performance for the present study.

Data Collection Instruments: The tool is divided into 2 parts as follows demographic variables and academic achievement rating scale which consists of 6 items to assess the academic performance of children. The tool was validated by experts in pediatric medicine and pediatric nursing.

Data Collection Procedure: The study was conducted at Government Higher Secondary school, Namandi. A prior written permission was obtained from the Headmaster of school. After self introduction, nature and objectives of the study was explained to obtain maximum cooperation. Purposive sampling method was used to select the samples. Pre test was conducted by Academic Achievement Scale. Those students who obtained score below 60% in pretest were provided with multi-sensory learning for a period of 7 days. Multi-sensory materials such as visual materials [flash cards, charts, posters, pictures, puzzles], auditory [word repetitions, songs], tactile [models, mathematical materials, shapes], kinaesthetic including [dramas, role play and actions] were provided in two sessions daily in accordance with their regular portions, one hour in morning after completion of morning classes and one hour in evening immediately after completion of their afternoon classes. At the completion of each sessions worksheets were given and three exams were conducted from that portions at the end of each weeks. After intervention post test was conducted and the scores were taken for analysis. At the end of the successful data collection, conveyed thanks to the Headmaster, Teachers and School children and winded up the study.

Data Analysis: The data collected was analyzed by using descriptive and inferential statistics on the basis of objective and hypothesis of the study. Frequency and percentage distribution was used to determine samples demographics and knowledge level. The paired “t” test was calculated to determine the effectiveness if psycho educational module. The chi square test was used to assess the association between knowledge levels with samples selected demographic variables.

RESULTS:

Table 1: Frequency and percentage distribution of Socio Demographic Variables of Study Samples N = 60

S. No	Demographic Variables	Experimental Group	
		F	%

1.	Age in Years a. 6-8 Years b. 8-10 Years c. 10-12 Years	13 33 14	21.7 55 23.3
2.	Gender a. Boys b. Girls	33 27	55 45
3.	Attendance Level a. 91-100% b. 81-90 % c. 71-80% d. 61-70%	13 18 9 20	21.7 30 15 33.3
4.	Grade Level a. Level 1 b. Level 2 c. Level 3	17 23 20	28.3 38.4 33.3
5.	Religion a. Hindu b. Muslim c. Christian d. Other	10 26 18 6	16.7 43.3 30 10
6.	Type of Family a. Nuclear b. No	35 25	58.3 41.7
7.	Special Tuition a. Yes b. No	19 41	31.7 68.3
8.	Mode of study in Home a. Self Study b. Parental Guidance	32 28	53.3 46.7

The above table reveals that, with regard to age group, 13(21.7%) were 8 years, 33 (55%) were 9 years and 14 (23.3%) were 10 years. With regard to gender, 33 (55%) were boys and 27 (45%) were girls. In terms of attendance level 13 (21.7%) were between 91-100%, 18 (30%) were between 81-90%, 9 (15%) were between 71-80% and 20 (33.3%) were between 61-70%. With regard to grade level 17(28.3%) were level 1, 23 (38.4%) were level 2 and 20 (33.3%) were level 3. In terms of religion 10 (16.7%) were Hindus, 26 (43.3%) were Muslims, 18 (30%) were Christians and 6 (10%) were belongs to other category. With regards to type of family 35 (58.3%) belongs to nuclear family and 25 (41.7%) belongs to joint family. With regards to special tuition 19 (31.7%) were attending and 41 (68.3%) were not attending special tuition. In terms of their mode of studying in home 32 (53.3%) learn by self study and 28 (46.7%) have parental guidance in their study.

Table 2: Frequency and percentage distribution of pre test and post test level of academic performance of school age children N =60

S. No	Level of Academic Performance	Experimental Group			
		Pretest		Post Test	
		F	%	F	%
1	Very Well	-	-	-	-
2	Pretty Well	-	-	19	31.7
3	Occasionally Well	-	-	40	66.7
4	Rarely	-	-	1	1.6
5	Never	60	100	-	-

The study results revealed that in experimental group, during pretest, 60 (100%) of samples were having low level of academic performance that is there score was less than 40 marks. During post test 40 (66.7%) samples academic

performance was in occasional category, 19 (31.7%) academic performance was pretty well and 1 (1.6%) academic performance was rarely well and none of them was under low performance.

Hence the hypothesis had been accepted that there was a significant difference in the academic performance of slow learners among school age children before and after using multi-sensory learning approach.

Table 3: Comparison of pretest and post test level of academic performance of slow learners in experimental group before and after multi-sensory learning approach N=60

S. No	Group	Pretest		Post Test		Paired t-test Value
		Mean	SD	Mean	SD	
1	Experimental Group	30.4	4.76	60.1	4.77	t=37.8 p=0.001 Significant

The data revealed that the comparison of pretest and post test academic performance of slow learners in experimental group. In experimental group, the pre test mean score was 30.4 and standard deviation was 4.76. The post tests mean score was 60.1 and standard deviation was 4.77. The calculated t test value was 37.8 which was significant at the level of p=0.001.

Hence the hypothesis had been accepted that multi sensory learning approach was effective in increasing the academic performance among slow learners.

Table 4: Association between the level of academic performance and demographic variables

S. No	Demographic Variables	Level of Academic Performance		Chi square Test
		Above Mean	Below Mean	
		F	F	
1.	Age in Years a. 6-8 years b. 8-10 years c. 10-12 years	5 9 5	8 24 9	X ² =0.23 df=2 NS
2.	Gender a. Boys b. Girls	9 11	24 16	X ² =1.21 df=1 NS
3.	Attendance Level a. 91-100 % b. 81-90 % c. 71-80 % d. 61-70 %	5 7 4 8	8 9 5 12	X ² =0.79 df=2 NS
4.	Grade Level a. Level 1 b. Level 2 c. Level 3	7 12 8	10 11 12	X ² =0.026 df=2 NS
5.	Religion a. Hindu b. Muslim c. Christian d. Others	4 14 12 2	6 12 6 4	X ² =0.97 df=3 NS
6.	Type of Family a. Nuclear b. Joint	14 6	21 19	X ² =1.68 df=1 NS
7.	Special Tuition a. Yes b. No	7 12	12 29	X ² =0.34 df=1 NS
8.	Mode of Study in Home a. Self Study b. Parental Guidance	3 27	0 30	X ² =3.15 P=0.07 Df=2 NS

The data reveals that, there was no significant association between the level of academic performance among slow learners with their selected demographic variables such as age (in years), gender, attendance level, grade, religion, type of family, special tuition and mode of study in home.

Hence the hypothesis had been rejected that there was a significant association between the academic performances of slow learners among school age children after using multi-sensory learning approach with selected demographic variables.

DISCUSSION:

The present study was a pre-experimental, one group pre test and post test study to assess the effectiveness of multi-sensory learning approach on academic performance of slow learners among 60 school age children in Government Higher secondary School, Namandi, Kanchipuram. Samples were been selected by using purposive sampling technique. The data was collected by using demographic variables and academic achievement rating scale, analyzed by using descriptive and inferential statistics.

The study results revealed that in experimental group, during pretest, 60 (100%) of samples were having low level of academic performance that is there score was less than 40 marks. During post test 40 (66.7%) samples academic performance was in occasional category, 19 (31.7%) academic performance was pretty well and 1 (1.6%) academic performance was rarely well and none of them was under low performance. The calculated t value of the experimental group was 37.8 which show the multi sensory learning approach was effective in improving academic performance among slow learners.

The research findings were congruent with the study conducted by Gajanan L. Gulhane (2009) to assess the effectiveness of multi-sensory learning approach on academic performance of students with learning disabilities in the primary school of Amaravathi district, India. The study aimed at determining the effectiveness of multi-sensory learning activities in improving academic performance of students. Experimental research design was adopted. Totally 60 students with low learning skills were selected and divided into two groups. The data required for the study is collected by means of achievement test and interview schedule. The findings of the study revealed the mean value 21.70 and SD 4.20 for experimental group and mean value 16.40 and SD 2.56 for control group. It is observed that the obtained t value (7.68) is more than the table value at 0.01 level of significance. Therefore the study proved that the multi-sensory learning activities have significant effect on the academic performance of children with low learning skills.

The study results revealed that there was no significant association between the academic performances of slow learners with their selected demographic variables.

The findings of the study is congruent with the study conducted by Nyaga Solomon Njeru (2010) on influence

of multi-sensory learning strategies on academic performance of children with learning disability in Nairobi country Kenya. The objective of this study is to identify whether differentiated teaching methods influence academic performance of learners with learning disability. Quantitative experimental research design was used. The study was conducted in 60 normal school going children with low learning skills. The samples were selected by convenient sampling technique and by classroom achievement tests. The study findings shown that differentiate teaching and learning resources ensures personalized attention. Effective use of differentiated methods of instruction helps the learners to achieve a high level of accuracy in their learning process. Findings of the study revealed a significant improvement in the post test after using multi-sensory learning strategy and no significant relationship was noted between the academic performance and demographic variables.

CONCLUSION:

The present study findings revealed that the multisensory learning approach was effective in improving academic performance of slow learners among school age children. It is proposed that nurse educators should collaborate with the policy makers in the education department to develop policies and implement training programmes for teachers and parents on factors influencing slow learning and importance of multisensory learning approach to enhance academic performance among slow learners.

CONFLICT OF INTEREST:

The researcher declares that there is no any conflict of interest in the entire research process.

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