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Learning Style and Retention of Class III-IV Primary Students

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Abstract

Combination of cognitional, affection and other behavioural –psychological expression which indicates such way separate a person interacts and response to the learning environment it's called Learning Style. Widely believe that perfect learning style helps both the students and teachers. Researchers focused on the comparative study on different learning style and find out which one most suitable to the children of 8-10 age groups. The study conducted on primary data, which collected from five primary schools of class III-IV from Baruipur Block, the district of South 24 Parganas, West Bengal and presented in quantitative methods. This study followed VAK (Visual, Auditory, and Kinesthetic) Model of Walter Barke Barbe, 1979. Researcher developed a questionnaire to measure the differences among Visual, Audio and Kinesthetic learning style. From the statistical analysis and interpretation it was revealed that, a significant difference within different learning style and not significant correlated with each other most of the cases. It also founded that no significant differences in boys and girls with respect to each learning style. The present study concluded that kinesthetic method more effective for retention in this age group.

Keywords: Learning Style, VAK Model, Retention, Visual, Audio, Kinesthetic.

Introduction

A classroom is a place of unity in diversity, where there are students of different through cultures, gender, socio-economic states, mentally and physically. In this case schools have to teach everyone in this diversity. So it is possible to get a lot more effective if use the method that everyone can easily accept the content. The concept of learning style became exoteric in the year 1970. Coffield et al. on their study founded 71 different models in learning[1]. Here list down different learning styles classified by different researchers which below mentioning –

According to David A. Kolb's (1984)[2] a. Accommodative b. Convergent c. Divergent d. Assimilative Learning Style	According to Peter Heney and Alan Mum form (1997)[3] a. Activist b. Reflector c. Theorist d. Pragmatist
According to Burke Barbe (1979)[4] a. Visual b. Kinesthetic / Tactile c. Auditory	According to Fleming (2014)[5] a. Visual b. Auditory c. Physical d. Social Learning Style
According to Agarwal (1978)[6] a. Individual V/S Non individual Learning Style b. Situation dependent V/S situation independent Learning Style	
c. Motivation centred V/S non motivation centred Learning Style d. Visual V/S audio Learning Style e. Environment centred V/S environment free Learning Style f. Flexible V/S non flexible Learning Style g. Short time V/S long time Learning Style h. Responsible V/S irresponsible Learning Style	

The researcher endeavour the review of previous study relevant to the present study that's were – Garcia et al. in their study "Learning and thinking styles: An analysis of their interrelationship and influence on academic achievement" founded that academic achievement moderately related with learning style and thinking style[7]. Ross, Drysdala, Schelz also accepted on their study "Cognitive Learning styles and academic performance in two postsecondary computer application courses" that academic performance correlated with effect of learning style[8]. Oughton and Read concluded on their study "The effect of hypermedia knowledge and learning style student – centred concept maps about hypermedia" that interrelationship among various ideas and concepts with learning styles and performance outcome[9]. The authors founded some common traits with respect to 2 learning style. The outcome indicated that convergent and divergent learners were maximal generative on their concepts. Crowe discusses in her study "Know Your Student's Learning Style: The missing Link in the Lecture V. Active Learning Issue" that how David R. Kolb's four type of student s learning style were helpful for teaching informing economics[10]. She identified some steps for

teaching and some learning activities through each learning style. Further researcher Sudharma and Thomas on their study "Effectiveness of Cooperative learning on Learning styles and academic performance in mathematics learning at the upper primary level" they were founded that Kolb's learning design increased the educational achievement and effective for teaching learning system[11]. Rajashree. S. Vaishnav in their study on "Learning style and academic achievement of secondary school students" it was revealed that most dominant method was kinaesthetic and other two methods (visual and auditory) were less dominating[12]. They collected sample form Maharashtra. Throughout the past ten years huge similar studies conducted in India the researcher were Malathi and Malini[13], Sathya Praksh and Patnaik[14], Mehraj Ahmad Bhat[15], Soghra Akbari Chermahini[16,] Hardigan and Sisco observed positive differences on students' preference and learning styles of under Graduate student[17]. Andrea Maria Honigsfeld, "a Comparative study of the learning style of adolescents from diverse nations by age, gender, educational achievement level and nationality" they were founded momentous distinction among learning style on the basis of groups and ages[18]. Yunfei and Simpon examined on their study "Effects of Learning styles and class Participation on Students Enjoyment Level in Distributed Learning Environment" that there was good relationship between learning style and class attendance on student pleasure level[19]. Farker conducted "A comparative study between traditional and learning style instructional methods", he founded effectiveness of learning style methods which increased the amount of achievement and interest towards learning[20]. Bricheno et al. "Some unexpected results of a learning styles intervention" founded 40% of UK population was kinaesthetic learner, 35% was visual learner and 25% was auditory learners[21]. In this study they also concluded that hardest skill was 'Listening' and easiest skill was 'Doing'. Kratzig and Arbuthnott on their study "Differentiation through Learning styles and memory" founded no significant relationship between memory and learning style[22]. But William organized a study and founded that learning style and achievement positively related. He concluded learning style helped to memorization[23]. Sibichen organised a study "Relationship between learning style and self efficacy of B.Ed. students". The study founded that there was no significant relationship between convergent and divergent learning style, but there was significant relationship between accommodating and assimilating learning style and self efficacy of B.Ed. students[24]. Irfan, Umar and Tie-Hui revealed in their study "The impact of Learning styles and Instructional Methods on Students' Recall and Retention in programming Education" that information retention was significantly affected by learning style[25]. Tuan, "Matching and Stretching Learners' Learning Styles" here he studied on how to learner helped in learning through learning style[26]. He concluded that it will increase the learner's confidence. Learning style helped both teacher and student. It also improved the thinking power. Veena Rani and Geeta Sharma concluded on their study "Importance of learning Styles in Education" that knowledge of learning was very important for student, teacher, administrators, parents and researcher[27]. They considered that use of learning style with teaching style gave better result. Connie Land studied on VAK Model. He founded that it was most effective for the age group 7-8 years and fruitful for teaching – learning environment[28]. Z. Gheadi and B. Jam revealed in their study "Relationship between Learning Styles and Motivation for Higher Education in EFL students" that Learning Style effective for increasing motivation of the students[29]. Hawkar Akram Awla proposes on his study "Learning Styles and Their Relation to Teaching Styles" that "teachers should try to adjust their learning style so that they match their students' learning styles"[30]. Sridhar Anand and M. Rajendraprasad conducted "A study on Learning styles and their impact of Science teaching among Primary School children" in Karnataka. The study revealed that most of the student preferred visual learning style and also founded learning style increased both motivation and efficiency of student and teacher[31]. Ang Siew Ling et al. studied on "Does Learning style impact student academic performance" in Malaysia. They founded significant relation between visual and sequential learning with respect to academic performance of MBA students[32]. Almigbal also support it[33]. M. Hardiana and P. Suyata studied on "The effectiveness of VAK (Visual, Auditory, Kinesthetic) Model in Learning of summary writing". They concluded that VAK model canbe applied in summaries writing and it was very important[34]. Amit Kauts and Samita directed a work on "Learning Style preferences among adolescent students". They founded knowledge of Learning Style was essential for improving instructional skills, assessment, curriculum development and counselling etc[35]. From the above discussion researchers to feel the need that find out which learning style better for retention of class III-IV students.

Objectives of the study: After reviewing the above literature researchers considered the followings as the objectives of the study: i. To find out relationship among different learning style. ii. To find out differences among different learning style. iii. To find out differences between boys and girls with respect to learning style in class III-IV. iv. To find out which learning style more effective for retention in class III-IV.

Hypothesis of the study: The researchers formulated the following hypothesis of the present study – H0.1: There is no significant relationship between 1st attempt question of visual method and 1st attempt question of audio method. H0.2: There is no significant relationship between 2nd attempt question of visual method and 2nd attempt question of audio method. H0.3: There is no significant relationship between 1st attempt question of visual method and 1st attempt question of kinaesthetic method. H0.4: There is no significant relationship between 2nd attempt question of visual method and 2nd attempt question of kinesthetic method. H0.5: There is no significant relationship between 1st attempt question of audio method and 1st attempt question of kinesthetic method. H0.6: There is no significant relationship between 2nd attempt question of audio method and 2nd attempt question of kinesthetic method. H0.7: There is no significant difference between 1st attempt question of visual

method and 1st attempt question of audio method. H0.8: There is no significant difference between 2nd attempt question of visual method and 2nd attempt question of audio method. H0.9: There is no significant difference between 1st attempt question of visual method and 1st attempt question of kinesthetic method. H0.10: There is no significant difference between 2nd attempt question of visual method and 2nd attempt question of kinesthetic method. H0.11: There is no significant difference between 1st attempt question of audio method and 1st attempt question of kinesthetic method. H0.12: There is no significant difference between 2nd attempt question of audio method and 2nd attempt question of kinesthetic method. H0.13: There is no significant difference between boys and girls based on their given answers with respect to different learning style.

Methodology

Nature of this study was quantitative and survey type.

Variable: Learning Style and retention were main variables and gender considered as the classificatory variable of the present study.

Sample: Researchers selected as a sample 120 (One Hundred Twenty) students of class III-IV from 5 primary school in Baruipur Block, the district of South 24 Pargana , West Bengal and divided in equal 3 groups. Researcher considered purposive sampling technique in this study for choosing the sample. The sample was homogeneous with respect to socio- economic background.

Tools used: Researchers framed a questionnaire to measure the effectiveness, relationship and differences of different learning style. The questionnaire composed with 10 questions which based on the teaching content. Each question was 1 marks credit, no negative marks. The study followed VAK Model[4]. Firstly among three groups, one group taught through Visual method, next group auditory method and last one group followed kinesthetic method. After giving taught in the same subjects throughout the VAK Model used a same questionnaire for each group (1st attempt). Again this Questionnaire used after the break time of next day (2nd attempt). Proper guidance was given them and maintaining.

Results and discussion

Table-1: Correlation (r) value of 1st attempt question of Visual method and 1st attempt question of Audio method.

Visual and Audio 1st attempt questions	Correlation (r) value
	.204

The computed value (.204) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels. Consequently the researcher concluded that there is a no significant relationship between 1st attempt question of Visual method and 1st attempt question of Audio method.

Table-2: Correlation (r) value of 2nd attempt question of Visual method and 2nd attempt question of Audio method.

Visual and Audio 2nd attempt questions	Correlation (r) value
	.353

The computed value (.353) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels. Consequently the researcher concluded that there is a no significant relationship between 2nd attempt question of Visual method and 2nd attempt question of Audio method.

Table-3: Correlation (r) value of 1st attempt question of Visual method and 1st attempt question of Kinesthetic method.

Visual and Kinesthetic 1st attempt questions	Correlation (r) value
	.079

The computed value (.079) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels. Consequently the researcher concluded that there is a no significant relationship between 1st attempt question of Visual method and 1st attempt question of Kinesthetic method.

Table-4: Correlation (r) value of 2nd attempt question of Visual method and 2nd attempt question of Kinesthetic method.

Visual and Kinesthetic 2nd attempt questions	Correlation (r) value
	.107

The computed value (.107) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels. Consequently the researcher concluded that there is a no significant relationship between 2nd attempt question of Visual method and 2nd attempt question of Kinesthetic method.

Table-5: Correlation (r) value of 1st attempt question of Audio method and 1st attempt question of Kinesthetic method.

Audio and Kinesthetic 1st attempt questions	Correlation (r) value
	-0.020

The computed value (.204) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels. Consequently the researcher concluded that there is a no significant relationship 1st attempt question of Audio method and 1st attempt question of Kinesthetic method.

Table-6: Correlation (r) value of 2nd attempt question of Audio method and 2nd attempt question of Kinesthetic method.

Audio and Kinesthetic 2nd attempt questions	Correlation (r) value
	.068

The computed value (.204) is much less than the table value (.393). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels of confidence. Consequently the researcher concluded that there is a no significant relationship between 2nd attempt question of Audio method and 2nd attempt question of Kinesthetic method.

Table-7: 'z' value of (Difference) 1st attempt question of Visual method and 1st attempt question of Audio method.

Method	No of Students	Mean	S.D.	'z' value
Visual method (1st attempt question)	40	6.675	1.384	.246
Audio method (1st attempt question)	40	6.75	1.334	

The computed value (.246) is much less than the table value (2.58). Therefore the value is not significant and null hypothesis is accepted at 0.01 levels of confidence. Consequently the researcher concluded that there is no significant difference between 1st attempt question of Visual method and 1st attempt question of Audio method.

Table-8: 'z' value of (Difference) 2nd attempt question of Visual method and 2nd attempt question of Audio method.

Method	No of Students	Mean	S.D.	'z' value
Visual method (2nd attempt question)	40	5.825	1.865	3.26*
Audio method (2nd attempt question)	40	4.625	1.689	

*Significant at 0.01 confidence level.

The computed value (3.26) is much greater than the table value (2.58). Therefore the value is significant and null hypothesis is rejected at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between 2nd attempt question of Visual method and 2nd attempt question of Audio method.

Table-9: 'z' value of (Difference) 1st attempt question of Visual method and 1st attempt question of Kinesthetic method.

Method	No of Students	Mean	S.D.	'z' value
Visual method (1st attempt question)	40	6.75	1.384	3.620*
Kinesthetic method (1st attempt question)	40	8	1.853	

*Significant at 0.01 confidence level.

The computed value (3.620) is much greater than the table value (2.58). Therefore the value is significant and null hypothesis is rejected at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between 1st attempt question of Visual method and 1st attempt question of Kinesthetic method

Table-10: 'z' value of (Difference) 2nd attempt question of Visual method and 2nd attempt question of Kinesthetic method.

Method	No of Students	Mean	S.D.	'z' value
Visual method (2nd attempt question)	40	5.825	1.865	3.826*
Kinesthetic method (2nd attempt question)	40	7.45	1.934	

*Significant at 0.01 confidence level.

The computed value (3.826) is much greater than the table value (2.58). Therefore the value is significant and null hypothesis is rejected at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between 2nd attempt question of Visual method and 2nd attempt question of Kinesthetic method.

Table-11: 'z' value of (Difference) 1st attempt question of Audio method and 1st attempt question of Kinesthetic method.

Method	No of Students	Mean	S.D.	'z' value
Audio method (1st attempt question)	40	6.75	1.334	3.46*
Kinesthetic method (1st attempt question)	40	8	1.853	

*Significant at 0.01 confidence level.

The computed value (3.46) is much greater than the table value (2.58). Therefore the value is significant and null hypothesis is rejected at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between 1st attempt question of Audio method and 1st attempt question of Kinesthetic method.

Table-12: 'z' value of (Difference) 2nd attempt question of Audio method and 2nd attempt question of Kinesthetic method.

Method	No of Students	Mean	S.D.	'z' value
Audio method (2nd attempt question)	40	4.625	1.689	6.98*
Kinesthetic method (2nd attempt question)	40	7.45	1.934	

*Significant at 0.01 confidence level.

The computed value (6.98) is much greater than the table value (2.58). Therefore the value is significant and null hypothesis is

rejected at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between 2nd attempt question of Audio method and 2nd attempt question of Kinesthetic method.

Table-13: 't' value of (Difference) boys and girls with respect to different learning style.

Methods	Visual	Audio	Kinesthetic
't' Value	.213	.065	1

The calculated 't' values are less than the table value (2.86). Therefore the values are not significant and null hypothesis is accepted at 0.01 levels of confidence. Consequently the researcher concluded that there is a significant difference between boys and girls with respect to different learning style.

Table-14: Deviation of mean score between 1st and 2nd attempt questions and percentage of retention with respect to different learning style.

Method	Visual	Auditory	Kinesthetic
Mean	.85	2.125	.55
% of Retention	58.25	46	74.5

Deviation of mean score between 1st and 2nd attempt questions highest in Audio method and lowest in Kinesthetic method. Also founded percentage (%) of retention highest in Kinesthetic method and lowest in Audio method.

Conclusion

In the study researchers founded that there are no significant relationship among various learning style. It also revealed in the present study that except 1st attempt questions of visual method and 1st attempt questions of audio method there are significant differences among various learning style. Considering all the findings at this point of the present study, although a relationship has been found at 0.05 level of confidence between visual and auditory methods, but no significant relationship was found between kinesthetic method and other methods. This means that the audio- visual method of teaching in primary section is similar in effect, but the Kinesthetic method is completely different. The study another point disclosed that no difference between boys and girls with respect to different learning style. The researchers may clearly state that from findings, learning in different learning styles cannot have any effect on the students in the context to their gender. Also researchers' finds that the difference between the number of correct answer in the 1st attempt questions and the number of correct answer in the 2nd attempt questions has been shown more in the Auditory method and less in the Kinesthetic method which shown by deviation of mean score. It also noticed that percent (%) of retention is higher in Kinesthetic method and lowest in Auditory method. So, it is clear in present study, if the students of class III-IV are taught in Kinesthetic method, more retention is found than Visual and Auditory method. This means Kinesthetic method is more effective for retention in learning of class III-IV.

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