

**LEARNING STYLE AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS**

Voice of Research
Vol. 1 Issue 4,
March 2013
ISSN No. 2277-7733

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Abstract

Learning style refers to the ability of learners to perceive and process information in learning situations. One of the most important uses of learning styles is that it makes it easy for teachers to incorporate them into their teaching. There are different learning styles. Three of the most popular ones are visual, auditory, and kinesthetic in which students take in information. This study is an analysis of learning styles prevalent among secondary school students. It was conducted on three learning styles-visual, auditory and kinesthetic (VAK). It also tries to find out relation and effect of different learning styles on academic achievements of students. A sample of 200 students of class 9th, 10th and 11th standard of Maharashtra state was selected for the study. Findings of the study reveal that, kinesthetic learning style was found to be more prevalent than visual and auditory learning styles among secondary school students. There exist positive high correlation between kinesthetic learning style and academic achievement. The main effects of the three variables - visual, auditory and kinesthetic are significant on academic achievement.

Keywords : learning, learning style, academic achievement

Every child follows its own unique way to learn and process information. They learn material in different ways. Some learn by oral repetition, some may learn by writing it out, while others may learn through practical work. Individuals thus differ in the way they learn. Learning style can be described as a set of factors, behaviours and attitudes that facilitate learning for an individual in a given situation. It is the ability of learners to perceive and process information in learning situations. Learning style is the characteristic cognitive, affective, social, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Learning styles can be defined, classified, and identifies in many different ways. Generally, they are overall patterns that provide direction to learning and teaching. Learning style can also be described as a set of factors, behaviours and attitudes that facilitate learning for an individual in a given situation. Styles influence how students learn, how teacher teach, and how the two interact. Each person is born with certain tendencies toward particular styles, but these biological or inherited characteristics are influenced by culture, personal experiences, maturity level and development. Style can be considered a 'Contextual' variable or construct because what the learner brings to the learning experiences is a part of the content as well as the important features of the learners experience itself. Each learner has distinct and consistent preferred ways of perceptions, organization and retention. Students learn differently from each other and it has been determined that brain structure influences language structure acquisition. It has also been shown that different hemispheres of the brain contain different perceptions avenues. Some researchers claim that several

types of cells present in some brains are not present in others are responsible for different pattern of perception among individuals.

Some students are visual learners, while others are auditory or kinesthetic learners. Visual learners learn visually by means of charts, graphs, and pictures. Auditory learners learn by listening to lectures and reading. Kinesthetic learners learn by doing. Students can prefer one, two, or three learning styles. Because of these different learning styles, it is important for teachers to incorporate in their curriculum activities related to each of these learning styles so that all students are able to succeed in their classes. While we use all of our senses to take in information, we each seem to have preferences in how we learn best. In order to help all students learn, we need to teach to as many of these preferences as possible (Cuaresma, 2008). When we think about a typical class room situation, it is rare to find all three of these approaches to learning incorporated into a class. While it may seem impossible to do this, it can be done through thoughtful planning and preparation. It does force us to conceptualize the class differently with a focus on the variety of ways in which students learn. The various inventories on learning styles allow teachers to gain insight into which areas they can use further development in and which are already well developed (Cuaresma, 2008). One of the most significant advances in education has come from a considerable amount of research done in the area of learning styles which recognizes that the students in classrooms have variety of different learning profiles. Some of the dimensions which have been investigated in



the area of learning style are perceptual learning styles, field dependence/independence, analytic/global learning styles and reflective/ impulsive learning styles. Some of the benefits of increasing learners’ awareness of their own learning styles: “higher interest and motivation in the learning process, increased student responsibility for their own learning, and greater classroom community. These are affective changes, and the changes have resulted in more effective learning” (Reid, 1999).

Gardner’s research has shown that human cognitive ability is pluralistic rather than unitary and that learners of any subject will make greater progress if they have the opportunity to use their areas of strength to master the necessary material. He recommends that teachers use a wide variety of ways to deal with the subject because “genuine understanding is most likely to emerge and be apparent to others (Gardner, 1991). In the classroom it is possible to motivate learners by activating multiple ways of meaning-making through the use of tasks relating to the different intelligences. Providing a variety of language activities that stimulate the different tools or intelligences proposed by Gardner (1999) makes it possible to engage multiple memory pathways necessary to produce sustained deep learning (Schumann, 1997). In order to achieve the ultimate goal of student learning it is important to use a combination of teaching methods and to make the classroom environment as stimulating and interactive as possible. Students learn in many different ways

According to Dunn and Dunn (1978), only 20-30% of school age children appear to be Auditory learners, 40% are visual learners, and 30-40% is tactile/kinesthetic or visual/tactile learners. Barbe and Milone (1981) stated that for school children the most frequent modality strengths are visual (30%) or mixed (30%), followed by auditory (25%), and then by kinesthetic (15%). Price, Dunn, and Sanders (1980) found that very young children are the most tactile/kinesthetic, that there is a gradual development of visual strengths through the elementary grades, and that only in fifth or sixth grade can most youngsters learn and retain information through the auditory sense. Carbo (1983), investigating the perceptual styles of readers, found that good readers prefer to learn through their visual and auditory senses, while poor readers have a stronger preference for tactile and kinesthetic learning.

In this present study the researcher used VAK Learning Style Brain Box by Howard Gardner and VAK learning style inventory by Victoria Chislett and Alan Chapman to identify the learning style prevailing among secondary level students and also to find the relationship between different learning style and academic achievement of students. For this purpose the sample of 200 students studying at standard. 8th to 11th in five different schools

namely M.K.H. Sancheti School, South Point School (Omkar Nagar), South Point School (Hanuman Nagar), Gayatri High School and Centre Point College of Nagpur city of Maharashtra state were selected.

Objectives : The following objectives were set for the study

To know types of learning style prevalent among secondary school students.

To study the relation between learning styles and academic achievement of secondary school students.

To compare the effect of different learning style on academic achievement secondary school students.

Hypothesis: The hypotheses formulated for the study are the following:

There will be no significant relation between learning styles and academic achievement of students.

There will be no significant effect of learning style on academic achievement of students.

Method

The study was conducted on sample of 200 students through random sampling technique from various schools of Nagpur city in Maharashtra state. After selecting the sample the Howard Gardner’s VAK learning style brain box and VAK Learning Style Inventory by Victoria Chislett. and Alan Chapman was used to identify the preferred learning style of students. On the basis of learning style, students were divided in to three groups Visual, Auditory and Kinesthetic. The co-relation between academic achievement and learning style was determined using Pearson’s product moment co-efficient of co-relation method and also to identify the effect of learning style on academic achievement ANNOVA F test was used. The results are summarized below

Table 1 Percentage of visual, auditory and kinesthetic learning style

Sr. no	Learning Style	Total	No. of Learners	Percentage
1.	Visual	200	67	33.5 %
2.	Auditory	200	57	28.5 %
3.	Kinesthetic	200	76	38.0 %

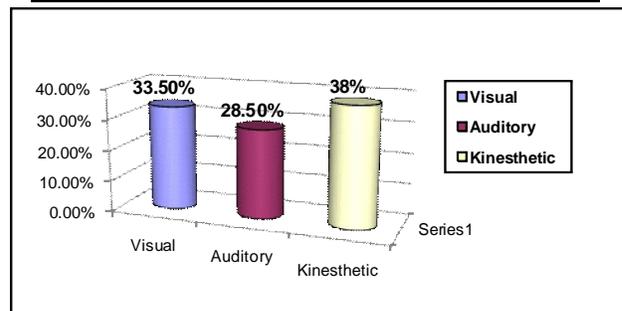


Fig.1 Percentage of visual, auditory and kinesthetic learning style



Results show that, numbers of kinesthetic learners are more than visual and auditory. It means kinesthetic learning style is more prevalent among students.

Table 2 Co-relation between different learning style and academic achievement.

Learning Style	Total No. of Students	Deviation of MEAN	Sum of squared Deviation	r
Visual	67	3.6	549.23	0.129
Academic Achievement	67	44.81	2840.20	
Auditory	57	6.8	963.96	0.287
Academic Achievement	57	69.21	2770.40	
Kinesthetic	76	11.3	333.76	0.658
Academic Achievement	76	73.04	4708.81	

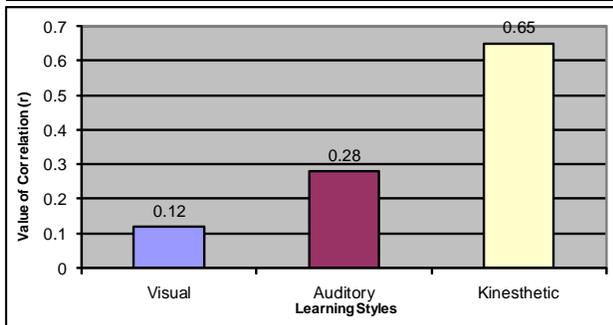


Fig2 Co-relation between different learning style and academic achievement

Table 2 shows the calculated ‘r’ for visual learner is 0.129 It means there exist a negligible correlation between visual learners and academic achievements. The value of ‘r’ is 0.287 for auditory learners Therefore there exists positive low correlation between auditory learners and academic achievements. The value of calculated ‘r’ of kinesthetic learner is 0.658 It means there exists positive high correlation between kinesthetic learning style and academic achievements

Table 3 Effect of different learning style on academic achievement of students.

Sources	df	Sum of squares	Mean square	‘F’
Between Mean	2	4643.05	2321.52	8.88*
Within Group	197	51497.22	261.40	

*** Significant at .01 level**

Table 3 reveals that different learning styles are more effective on academic achievements of students. The computed effect of (VAK) learning style is significant on 0.01 level It means there exists a significant effect of different learning styles on academic achievements.

Conclusion

Kinesthetic Learning Style is found to be more prevalent than Visual and Auditory Learning Style. There exists

positive high correlation between Kinesthetic Learning Style and academic achievement of students.

Very negligible positive correlation was found between Visual Learning Style and academic achievement of students. Where as positive low correlation between Auditory Learning Style and academic achievement of students. Therefore, Kinesthetic Learners are more benefited in traditional classroom at secondary level.

There exists significant effect of Different Learning Styles and academic achievement of students.

Educational implications

Visual learners may draw a map of events in history or draw scientific process, watch videos, use highlights, circle words, underline, take notes make list. Auditory learners may use word association, record lectures, listen videos, group discussions, taping notes etc. Kinesthetic learners may study in short blocks, attend lab. Classes, take field trips, visit museums etc. Students may improve their academic achievements and strengthen the weaken areas of studies Teachers may find out own preferred learning style which often becomes predominant learning style Teacher may find out students learning style for better learning. Parents should be made aware about different kind of approaches help their child learn best

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<http://dx.doi.org/10.2307/3586356>