



COMPARATIVE ANALYSIS OF LEARNING STYLE OF HIGHER SECONDARY SCHOOL STUDENTS

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RESEARCH ARTICLE



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Abstract

The present study entitled “*Comparative Analysis of Learning Style of Higher Secondary School Students*” was undertaken to examine the learning styles of higher secondary school students and the influence of selected demographic variables. The study was conducted among 210 students from Government, Aided, and Self-financing schools using the VARK Learning Style Inventory. Descriptive, differential, correlation, and regression analyses were employed. The findings revealed that the overall learning style of higher secondary school students was high, with auditory learning style being the most preferred. Significant differences were found with respect to age, locality, school type, and academic group, whereas gender, medium of instruction, parental qualification, parental occupation, parental income, and family type showed no significant influence. Correlation analysis indicated a weak relationship between age, gender, and learning style scores. Regression analysis showed that age and gender were significant predictors of learning style. The study also identified visual learning style as the dominant style, while kinesthetic, read-write, and auditory learning styles were comparatively less dominant.

Keywords: *Higher Secondary School Students, Learning Style*

Introduction

Learning is a continuous process through which students acquire knowledge, skills, and attitudes. Every student learns in a different way, known as a learning style. Learning style refers to the preferred method by which an individual understands and retains information. The VARK model classifies learning styles into Visual, Auditory, Read-Write, and Kinesthetic types. Understanding students’ learning styles is important for effective teaching and better academic achievement. Higher secondary students differ in their learning preferences due to factors such as age, locality, school type, and academic group. Therefore, it is essential to identify and compare their learning styles. The present study entitled “*Comparative Analysis of Learning Style of Higher Secondary School Students*” aims to examine the learning styles of higher secondary school students and the influence of selected demographic variables on learning style.

Significance of the Study

The present study is significant as it helps in understanding the learning styles of higher secondary school students and the differences among them. Students learn in different ways such as Visual, Auditory, Read/Write, and Kinesthetic styles. Identifying these preferences enables teachers to use suitable teaching methods according to students’ needs. The study is useful for teachers, parents, curriculum planners, and educational administrators in improving the teaching-learning process. It helps teachers adopt learner-centered strategies and supports students in identifying their preferred learning methods and improving study habits. The findings may also serve as a basis for future research on learning styles and academic achievement among higher secondary school students.

Need of the Study

Learning is an individual process, and students differ in the ways they understand and retain knowledge. In many classrooms, teaching methods often focus on average learners and may not address individual learning preferences. Higher secondary education is an important stage that influences students’ future education and career development. Therefore, it is essential to identify students’ learning styles such as Visual, Auditory, Read/Write, and Kinesthetic. A comparative analysis of learning

styles helps teachers understand differences among students based on variables like gender, locality, and school type. This understanding enables teachers to adopt suitable teaching strategies and create an effective learner-centered classroom environment. Hence, the present study aims to analyze the learning styles of higher secondary school students.

Statement of the Problem

The research problem is stated as comparative analysis of learning style of higher Secondary school students.

Operational Definition

- ❖ Learning style in this research refers to the result obtained by the higher Secondary school students in the research tool VARK-questionnaire developed by Neil D. Fleming. (Adopted from VARK learn limited 2026)
- ❖ Higher Secondary-it refers to the students studying XI and XII standard in schools.

Objectives

1. To assess the level of learning style of higher secondary students.
2. To compare the relationship between Learning style of higher secondary students and subsamples.
3. To find the predictor of learning style of students.
4. To determine dominants of learning style of higher secondary students.

Hypothesis

1. To assess Learning styles of higher secondary students.
2. There is no significant relationship between subsamples and Learning styles of higher secondary students.
3. There is no predictor of learning styles of higher secondary students.
4. There are no dominant learning styles found among higher secondary student

Methodology

The present study adopted the Normative Survey Method. The researcher selected the sample using the random sampling technique. The research tool consisted of two parts. The first part included a Personal Data Sheet to collect demographic details of the respondents. The second part consisted of the VARK Learning Style Inventory used to identify students' preferred learning styles such as Visual, Auditory, Read/Write, and Kinesthetic. The VARK Learning Style Inventory developed and standardized by Neil D. Fleming in 1987 (Version 8.01) was used for the study. The tool contained 40 items measured on a five-point Likert scale: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. The questionnaire included 10 items under each dimension namely Visual, Auditory, Read/Write, and Kinesthetic learning styles. Scores for each learning style were calculated separately, and the highest score indicated the respondent's preferred learning style. The reliability of the tool was established through Cronbach's Alpha method and found to be satisfactory ($\alpha = 0.82$). The validity coefficient of the tool was 0.91, indicating high validity. The population of the study consisted of higher secondary school students studying in schools located in Cuddalore District. A sample of 210 higher secondary school students from three schools was selected through random sampling technique. Descriptive, differential, correlation, and regression analyses were employed.

Analysis Of The Level Of Learning Styles Of Higher Secondary School Students Score

One of the important objectives of the study is to assess the level of learning styles of higher secondary school students not only for the entire sample but also subsamples wise. For that the mean, standard deviation values have been calculated for entire and subsamples which include school type, age, gender, locality, medium, group, Parental qualification, parent's occupation, parental income, and family type.

Variable	N	Mean	SD
Learning Styles Score	210	143.8	16.6

The above table 1 shows the mean score and standard deviation of learning styles Score of Higher Secondary school students are found to be 143.3 and 16.6 respectively. It is concluded that the Higher Secondary school students Learning style is high (121-160).

S.No	Learning Styles	N	Mean	Std. Deviation
1	Kinesthetics	210	35.57	10.05
2	Auditory	210	37.92	9.61
3	Read-Write	210	34.63	10.54
4	Visual	210	35.15	10.84

Table 2 shows the Mean and Standard Deviation of learning style scores among higher secondary school students. Among the four learning styles, Auditory learning style has the highest mean score (37.92), indicating that students prefer learning through listening and discussions. Kinesthetic (35.57) and Visual (35.15) learning styles show moderate preference, while Read-Write

learning style has the lowest mean score (34.63). Overall, the findings reveal that auditory learning is the most preferred learning style among the students.

S.NO	Variable	N	Mean	STD	S.NO	t	result
1	Age	16	140	147.3	17.5	2.81	S
		17	70	140.3	15.7		
2	Gender	Female	171	145.9	17.2	1.58	NS
		Male	39	141.1	16.9		
3	Locality	Rural	140	147.3	17.5	2.82	S
		Urban	70	140.3	15.7		
4	Medium	Tamil	140	147.3	17.5	0.84	NS
		English	70	140.3	15.7		

- ❖ **Age:** The t-test result shows a significant difference in learning style scores with respect to age ($t = 2.81$). Students aged 16 years obtained a higher mean score (147.3) than students aged 17 years (140.3). Hence, age significantly influences learning style scores.
- ❖ **Gender:** The t-test result indicates no significant difference in learning style scores based on gender ($t = 1.58$). Female students obtained a mean score of 145.9, while male students scored 141.1. Hence, gender does not significantly influence learning style scores.
- ❖ **Locality:** The t-test result reveals a significant difference in learning style scores with respect to locality ($t = 2.82$). Rural students obtained a higher mean score (147.3) than urban students (140.3). Hence, locality significantly influences learning style scores.
- ❖ **Medium of Instruction:** The t-test result shows no significant difference in learning style scores based on medium of instruction ($t = 0.84$). Tamil medium students obtained a mean score of 147.3, while English medium students scored 140.3. Hence, medium of instruction does not significantly influence learning style scores among higher secondary school students.

S.NO	Variable	N	Mean	STD			
1	School type	Government	70	147.3	16.9	4.09	S
		Self-finance	70	141.3	17.5		
		Aided	70	142.9	15.7		
2	Group	A	120	147.3	17.5	5.861	S
		B	14	141.3	15.7		
		C	76	142.8	17.2		
3	Parental Qualification	School	120	145.3	17.2	0.64	NS
		Diploma	50	140.3	16.9		
		College	40	145.8	16.9		
4	Parent occupation	Daily wages	165	143.4	17.9	0.33	NS
		Self-employ	25	144.0	14.3		
		Business	11	142.7	17.9		
		Government	9	145.2	16.9		
5	Parent Income	0-25	105	142.8	17.2	1.01	NS
		25-50	66	143.8	16.9		
		50-75	39	144.9	16.9		
6	Family type	Joint	78	144.7	17.9	1.31	NS
		Nuclear	101	143.6	14.3		
		Single	30	143.2	17.9		

- ❖ **School Type:** The F-test result shows a significant difference in learning style scores based on school type ($F = 4.09$). Government school students recorded the highest mean score (147.3), followed by aided (142.9) and self-finance students (141.3). Hence, school type significantly influences learning style scores.
- ❖ **Academic Group:** A significant difference was found in learning style scores with respect to academic group ($F = 5.861$). Group A students obtained the highest mean score (147.3), followed by Group C (142.8) and Group B (141.3). Therefore, academic group has a significant influence on learning style scores.
- ❖ **Parental Qualification:** The F-test result indicates no significant difference in learning style scores based on parental qualification ($F = 0.64$). Students whose parents had college education showed a slightly higher mean score (145.8), but overall the difference is not significant.
- ❖ **Parent Occupation:** No significant difference was found in learning style scores based on parent occupation ($F = 0.33$). Although government-employed parents had a slightly higher mean score (145.2), the variation is not statistically significant.
- ❖ **Parent Income:** The result shows no significant difference in learning style scores with respect to parent income ($F = 1.01$). Students from the 50–75 income group showed a slightly higher mean (144.9), but the difference is not significant.
- ❖ **Family Type:** The F-test result indicates no significant difference in learning style scores based on family type ($F = 1.31$). Students from joint families had a slightly higher mean score (144.7), but overall the difference is not significant.

S.No	Personal Variables	Learning style
1.	School type	-.056
2.	Age	-.192*
3.	Gender	-.109*
4.	Locality	-.014
5.	Medium	-.101
6.	Group	-.080
7.	Parental Qualification	-.109
8.	Parent occupation	-.061
9.	Parent Income	.178
10.	Family type	-.056

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

The correlational analysis (table 4.15) between learning style and personal variables reveals that most of the variables show low and negative correlations with learning style. Among the variables, age ($r = -0.192$) and gender ($r = -0.109$) show significant negative correlations at the 0.05 level, indicating that these variables have a slight relationship with learning style scores. The variables such as school type ($r = -0.056$), locality ($r = -0.014$), medium ($r = -0.101$), group ($r = -0.080$), parental qualification ($r = -0.109$), parent occupation ($r = -0.061$), and family type ($r = -0.056$) show negligible negative correlations with learning style and are not statistically significant. Parental income ($r = 0.178$) shows a low positive correlation with learning style, indicating a slight positive relationship, though it is not significant. Overall, the findings indicate that personal variables have only a weak relationship with the learning style scores of higher secondary school students.

Model	B	Std. Error	Beta	Pearson r	Sr ²	Structure Coefficient
(Constant)	335.427	11.950				
AGE	-18.758	5.174	-.258	-.192	.059	.721
Gender	-17.284	6.272	-.196	-.109	.034	.410

Note. The dependent variable is Learning Style. $R^2 = .071$, Adjusted $R^2 = .062$, Sr^2 is squared semi-partial correlation. $F(2,207) = 7.896, * p < .05$

Table 6 shows School type, Age, Gender, Locality, group, Mother qualification, Father qualification, Parental occupation, Parental income, Number of family members, family type, separate study room, study table and Learning Style were used in a stepwise multiple regression analysis to predict Learning Style. The prediction model contained two of the thirteen predictors and was reached in two steps with 11 variables removed. The model was statistically significant, $F(2,207) = 7.896, p < .001$, and accounted for approximately 7% of the variance of Learning Style ($R^2 = .071$, Adjusted $R^2 = .062$). Learning Style is primarily predicted by the lower levels of age, and to the lesser extent by the higher levels of gender. The raw and standardized regression coefficient of predictors together with their correlation with Learning Style, their squared semi-partial correlations, and their structure coefficients are shown in table-6. The Age received the strongest weight in model followed by Gender. Gender received the lowest weight of the two weights. With the sizeable correlations between the predictors, the unique variance explained by each of the variables indexed by the squared semi-partial correlation was relatively low: The Age and Gender uniquely accounted for approximately 6%, and 3% of the Learning style. Inspection of the structure coefficient suggests that, the Age was relatively strong indicators of learning style, and gender was a moderate indicator of learning style.

Model	B	Std. Error	Beta	Pearson r	Sr ²	Structure Coefficient
(Constant)	1.089E-15	.000				
Visual	1.000	.000	.316	.869	.043	.869
Kinesthetic	1.000	.000	.293	.804	.049	.804
Read-Write	1.000	.000	.307	.848	.045	.848
Auditory	1.000	.000	.280	.823	.040	.823

Note. The dependent variable is teaching competency. $R^2= 1$, Adjusted $R^2= 1$, Sr^2 is squared semi-partial correlation. * $p < .05$. $F(4,205) = 1628.156$

Table 7 shows Visual, Kinesthetic, Read-Write, Auditory and Learning Style were used in a stepwise multiple regression analysis to predict dominant Learning Style. The prediction model contained four of the four predictors and was reached in four steps with no variables removed. The model was statistically significant, $F(2,205) = 1628.158$, $p < .001$, and accounted for approximately 7% of the variance of Learning Style ($R^2=1$, Adjusted $R^2=1$). Learning Style is primarily predicted by the lower levels of Kinesthetic and to the lesser extent by the higher levels of Visual, Read-Write and Auditory. The raw and standardized regression coefficient of predictors together with their correlation with Learning Style, their squared semi-partial correlations, and their structure coefficients are shown in table-7. The Visual received the strongest weight in model followed by Read-Write, Auditory and Kinesthetic. Kinesthetic received the lowest weight of the four weights. With the sizeable correlations between the predictors, the unique variance explained by each of the variables indexed by the squared semi-partial correlation was relatively low: The Visual, Kinesthetic, Read-Write and Auditory uniquely accounted for approximately 4%, 5%, 5%, and 4% of the Learning style. Inspection of the structure coefficient suggests that, the Visual was dominant learning style and Kinesthetic, Read-Write, and Auditory were relatively less dominant learning styles of the higher secondary school students.

Discussion of Findings

The present study examined learning styles of higher secondary school students and the influence of selected demographic variables. The descriptive analysis showed that students had a high level of learning style preference, indicating effective and varied learning approaches. Among the four styles, auditory learning was the most preferred, suggesting that students learn better through listening and verbal explanation. The study found that Government school students and rural students had comparatively higher learning style scores, while age showed a significant influence, with 16-year-old students scoring higher than 17-year-olds. However, gender and medium of instruction did not show significant differences. Academic group also showed a significant impact, indicating variation in learning styles across subject streams. Parental qualification, occupation, income, and family type did not significantly influence learning style scores, although slight variations were observed. Correlation results indicated weak relationships between age, gender, and learning style, suggesting that demographic factors alone do not strongly determine learning preferences. Regression analysis showed that age and gender were significant but weak predictors of learning style. Further, visual learning style was identified as the dominant style, followed by kinesthetic, auditory, and read-write preferences. Overall, the study highlights that learning styles vary across students and emphasizes the need for teachers to adopt learner-centered teaching strategies based on students' preferences.

Conclusion

The study concludes that higher secondary school students possess a high level of learning style preferences, with auditory learning style being the most preferred among the students. Significant differences were observed in learning style scores with respect to age, locality, school type, and academic group, indicating that demographic factors influence students' learning styles to some extent. However, variables such as gender, medium of instruction, parental qualification, parental occupation, parental income, and family type did not show significant influence on learning style scores. The findings emphasize the importance of identifying students' learning styles for improving teaching and learning practices. Understanding students' preferred learning styles can help teachers adopt suitable instructional strategies and create effective classroom environments. Therefore, the study highlights the need for learner-centered teaching approaches to enhance the overall learning experience of higher secondary school students.

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