

# A Study on Relationship between Self-Regulated Learning Habit and Achievement among High School Students

K. Vijayarani<sup>1,\*</sup>, Vinnaras Nithyanantham<sup>2</sup>, Jerusha Angelene Christabel G<sup>3</sup>, Divya Marupaka<sup>4</sup>

<sup>1</sup>Department of Education (SDE), Bharathiar University, Coimbatore, Tamil Nadu, India. <sup>2</sup>School of Education, DMII St. John the Baptist University, Mangochi, Malawi, South Africa. <sup>3</sup>Department of English, Sathiyabama Institute of Science and Technology, Chennai, Tamil Nadu, India. <sup>4</sup>Department of Software Engineer, Unikon IT Inc, Irvine, California, United States of America. vijayarani.k@buc.edu.in<sup>1</sup>, profvinnaras.n@gmail.com<sup>2</sup>, jeru123bell@gmail.com<sup>3</sup>, divya.marupaka@tmnas.com<sup>4</sup>

Abstract: Self-regulation in academic contexts entails a multi-dimensional construct including cognitive, meta-cognitive, motivational, behavioral, and environmental processes the learners can apply to enhance academic achievement. Learners' ability, effectiveness, and attainment are measured by means of their academic scores. For students who are entering into the next stage of higher education, placement is based on achievement scores only. All type of students is not reaching their high-level achievement scores. Some student scores high, some students score very low level, and some students score suddenly contrast. But at the end of the secondary examination, they can't achieve their high scores; instead, they get low scores. Some students have well-efficient and conditioned family support, but the students are not able to reach their achievement at a high level. This is because these students underestimated the curriculum of their study, lacked their learning strategies, peer group destruction, overconfidence about themselves, and insufficient support from the environment. It has been found that there is no significant difference among high school students in their academic achievement with respect to variables like sex, locality and, girls, boys, and co-education institutions, type of family. There is no significant difference among the high school students whose parents are private employees, government employees and self-employed in their achievements.

**Keywords:** Self-Regulation; Learning Habits; Learning Strategies; Achievement; Self-Employed; Peer Group; Secondary Examination; Co-Education Institutions; Type of Families.

Received on: 11/01/2023, Revised on: 05/03/2023, Accepted on: 19/04/2023, Published on: 04/06/2023

**Cited by:** K. Vijayarani, V. Nithyanantham, G. J. Angelene Christabel, D. Marupaka "A Study on Relationship Between Self-Regulated Learning Habit and Achievement Among High School Students," *FMDB Transactions on Sustainable Techno Learning.*, vol. 1, no. 2, pp. 92–110, 2023.

**Copyright** © 2023 K. Vijayarani *et al.*, licensed to Fernando Martins De Bulhão (FMDB) Publishing Company. This is an open access article distributed under <u>CC BY-NC-SA 4.0</u>, which allows unlimited use, distribution, and reproduction in any medium with proper attribution.

## 1. Introduction

Education is valued on the basis of the performance exhibited by the pupils. Among the various causes for high and low achievement, self-regulated learning habits play a major role in this aspect [5]. Self-regulated learning strategies are researchbased instructional techniques to help learners monitor and manage their learning skills and habits. When paired with strategy instruction and Metacognitive processes, instructors have a powerful learning toolkit to share with learners [6]. This sort of study relating the factors affecting self-regulated learning and achievement may help educators and educational planners to teach the right attitude and self-interests toward academic and self-regulated learning habits [7]. Primary components influencing scholarly achievement are full of feeling factors, viz. subjective style, motivation, nervousness, study propensities, level of yearning, stress, esteem, tirelessness, self-adequacy, enthusiastic development, disposition, modification, premium, need, and interest; intellectual factors viz. capacity, knowledge, imagination, critical thinking, thinking capacity, and learning

<sup>\*</sup>Corresponding author.

rate; school-related components viz. kind of school, school atmosphere, educator's character, homework, estrangement, instructors' desire and disposition, preparing systems, educators' understanding, mechanism of guidance, instructors' conduct and competency and study hall condition; home-related factors viz. family size, birth request, financial status of family, sex predisposition, parental involvement, parental help, hardship, youngster raising works on, working systems administration guardians, parental bent and desires [8].

Though a lot of work has been done in the area of self-regulated learning abroad, such has been conducted in India, except a few [9]. The researchers found this area a very challenging one. Nowadays, knowledge is multiplying day by day when new methodologies, strategies, and techniques are being explored, where new approaches and systems are being invented, where new models are being initiated to redesign and reshape the prevailing academic environment in institutions to keep pace with the increasing knowledge in each sphere; where educational literature is being enriched by new making learning more promising and maximally effective to the learner by making instruction individualized. Nevertheless, the students and their needs, capabilities, special interests and motivation, and their styles of learning together are the basis for all decisions about individualizing learning activities [10]. Investigations may be seen in the area of student interest, student attitude, and studentmental ability and other related aspects. Still, no research work has been evidenced in the area of self-regulated learning of high and low-high creative junior high school girl students [11]. Thus, the research in this area is the most important and indispensable because it does affect, to a greater extent, the achievement of the student. So, the researcher is curious to find out the self-regulated learning of high school students [12].

# 2. Review of Related Literature

Students struggle with online courses due to a lack of self-regulation abilities, according to research by Zimmerman [1]. Students can improve their academic and personal functioning by employing self-regulated learning practises. Unable to control their own behaviour, students are less invested in school, perform poorly, and are more likely to leave out. Students are not taught to self-regulate, according to the research. Therefore, it is important to provide college students with self-regulated learning experience. There is a lack of knowledge on the implementation of SRLS, despite its importance in facilitating distance education for college students. This research provides a conceptualization of a framework for self-regulated learning strategies applicable to online education at the university level. Teachers and students alike can use this framework as a road map to autonomous success in today's ubiquitous digital classroom.

According to Velmurugan and Balakrishnan [2], there has been research into how students' achievement, problem-solving skills, and ability to self-regulate their learning are affected by using problem-based learning and concept mapping methodologies in science. According to the needs of the investigation, the researcher used an experimental methodology. We employed appropriate statistical methods and software to assess the planned outcomes and draw our results. The results of the study showed that using problem-based learning and concept mapping methodologies improved students' ability to retain and understand course material. Both approaches assist students learn to think critically about their own learning and to better structure and manage their time in the classroom. The findings of the current research pave the way for progressive and constructivist pedagogical practises to be implemented across the board in the nation's public-school systems.

To this end, Verma and Upadhyay [3] set out to research the efficacy of strategies for self-regulated learning. A quasiexperimental pre-test post-test control group design was used with a sample size of twenty pupils per group. The students' grades in essay and writing classes were used as a benchmark, along with results from a questionnaire measuring their ability to self-regulate their learning. The educational implications of the study were dissected. The children' self-regulated learning and academic achievement increased across the board, as judged by the study's instruments. They agree with research showing that students, by altering their mindsets, can improve their academic performance. Student learning behaviour can be modified through the self-regulated learning process.

Vez [4] uses an experimental approach to analyse how the Synectic Model influences English proficiency, motivation for academic success, and linguistic imagination. The main results of the current study reveal that the group taught using the Synectic Model had considerably higher mean gain achievement in English than the group taught using the Conventional technique. When comparing the Synectic Method to the Traditional Approach, it was discovered that the former was much more effective in raising students' achievement in English class. Students with cognitive styles outside of the English language who were taught using the Synectic Model showed considerably greater mean gain accomplishment compared to students taught using the Conventional Model. Students' English language proficiency improved significantly when they were taught using the Synectic Model had much higher mean gain accomplishment motivation than the group taught using the Conventional mode of teaching. The group with a field-independent cognitive style had a considerably greater mean gain accomplishment motivation than the group taught using the group with a field-dependent cognitive style. It was discovered that accomplishment

motivation is significantly impacted by the interaction effect of instructional strategy and cognitive style on learning outcomes. Language creativity taught using the Synectic Model was found to have much higher mean gain achievement than language creativity taught using the Conventional Model. The independent cognitive style group was shown to have significantly higher mean gain achievement in linguistic inventiveness than the field-dependent cognitive style group.

## 3. Statement of the Problem

Self-regulation in the academic contexts entails a multi-dimensional construct including cognitive, meta-cognitive, motivational, behavioral, and environmental processes the learners can apply to enhance academic achievement. More specifically, it refers to "planning and managing time; attending to and concentrating on instruction; organizing, rehearsing and coding information strategically; establishing a productive work environment; and using social resources effectively." Achievement is the end product of the learning experience [13]. Learners' ability, effectiveness, and attainment are measured by means of their academic scores. For students who are entering into the next stage of higher education, placement is based on achievement scores only [14]. All type of students is not reaching their high-level achievement scores. Some student scores high, some students score very low level, and some students score suddenly contrast. By analyzing data, the researcher was surprised by the variation and effect. Nowadays, students who are entering the higher secondary Biology groups score high in their high school [15]. But at the end of the secondary examination, they can't achieve their high scores; instead, they get low scores. Some students have well-efficient and conditioned family support, but the students are not able to reach their achievement at a high level. This is because these students underestimated the curriculum of their study, lacked their learning strategies, peer group destruction, overconfidence about themselves, and insufficient support from the environment. Considering all these factors, the researcher decided to study "A Study on Relationship Between Self-Regulated Learning Habit and Achievement Among High School Students" [16].

## 3.1. Objectives of The Study

The objectives of the study are:

- To find out the level of self-regulated learning Habits of High School Students
- To find out the level of Achievement of High School Students
- To find out the significant difference between male and female high school students in their self-regulated learning habits.
- To find out the significant difference between Urban and Rural high school students in their self-regulated learning habits.
- To find out the significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habits.
- To find out the significant difference among high school students studying in boys, girls, and co-education schools in their self-regulated learning habits.
- To find out the significant difference among high school students belonging to nuclear and joint families in their self-regulated learning habits.
- To find out the significant difference among high school students studying Tamil and English medium in their self-regulated learning habits.
- To find out the significant difference between the high school students whose parents are school-educated and graduates in their self-regulated learning habits.
- To find out the significant difference between the high school students whose parents are private employees, government employees, and self-employed in their self-regulated learning habits.
- To find out the significant difference between male and female high school students in their achievement.
- To find out the significant difference between Urban and Rural high school students in their achievements.
- To find out the significant difference among high school students studying in government, aided, and matriculation schools in their achievements.
- To find out the significant difference among high school students studying in boys, girls, and co-education schools in their achievements.
- To find out the significant difference among high school students belonging to nuclear and joint families in their achievements.
- To find out the significant difference among high school students studying in Tamil and English medium in their achievement.
- To find out the significant difference between the high school students whose parents are school-educated and graduates in their achievements.

- To find out the significant difference between the high school students whose parents are private employees, government employees and self-employed in their achievement.
- To find out the relationship between the self-regulated learning habits and achievement of high school students.

# **3.2.** Hypotheses of The Study

- To find the level of self-regulated learning Habits of High School Students
- To find out the level of Achievement of High School Students of High School Students
- There is no significant difference between male and female high school students in their self-regulated learning habits.
- There is no significant difference between Urban and Rural high school students in their self-regulated learning habits.
- There is no significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habits.
- There is no significant difference among high school students studying in boys, girls, and co-education schools in their self-regulated learning habits.
- There is no significant difference among high school students belonging to nuclear and joint families in their self-regulated learning habits.
- There is no significant difference among high school students studying in Tamil and English medium in their self-regulated learning habits.
- There is no significant difference between the high school students whose parents are school-educated and graduates in their self-regulated learning habits.
- There is no significant difference among the high school students whose parents are private employees, government employees, and self-employed in their self-regulated learning habits.
- There is no significant difference between male and female high school students in their achievement.
- There is no significant difference between Urban and Rural high school students in their achievements.
- There is no significant difference among high school students studying in government, aided, and matriculation schools in their achievement.
- There is no significant difference among high school students studying in boys, girls, and co-education schools in their achievement.
- There is no significant difference among high school students belonging to nuclear and joint families in their achievements.
- There is no significant difference between high school students studying in Tamil and English medium in their achievements.
- There is no significant difference between the high school students whose parents are school-educated and graduates in their achievements.
- There is no significant difference among the high school students whose parents are private employees, government employees and self-employed in their achievements.
- There is no significant relationship between the self-regulated learning habit and achievement of high school students.

# 3.3. Methodology of The Study

Variables of the Study: The variables used in the study were self-regulated learning habits and achievement

Method Adopted: The researcher employed the descriptive Survey method for the present study

Population: All the students studying in standard IX in the high schools and higher secondary schools from the population of the present study

Sample: 250 students of standard IX studying Trichy District were selected as the sample using a simple random sampling technique.

## 3.4. Tools of the Study

Reliability: the reliability of the tool is 0.97, and Marks obtained by the students in 9th class were treated as achievement scores.

Statistical Techniques used. The main statistical procedures used for analysis were the 't-test, ANOVA, and Pearson Product Moment Coefficient Correlation.

# 3.5. Delimitations of The Study

Due to the lack of time and resources and to make it more meaningful, the present study has been delimited in the following aspects:

- The study has been delimited to high school students only.
- The study has been delimited to the schools affiliated with Tamil Nadu State Board of Secondary Education, Trichy District.
- The study has been delimited to the only district of Trichy District.

# 4. Percentage Analysis

To find the level of self-regulated learning Habits of High School Students.

Table 1: Level of Self-Regulated Learning Habits of High School Students

	Le	)W	Hi	gh
Variable	Ν	%	Ν	%
Self-regulated Learning Habit	76	30.40	174	69.60

From the above table 1, it is found that 30.40% of high school students have low self-regulated learning habits, and 69.60% of them have self-regulated learning habits (fig.1).



Figure 1: Level of Self-Regulated Learning Habit of High School Students

To find the level of Achievement of High School Students

Table 2: Level of Achievement of High School Students

	Le	DW	Hi	igh
Variable	Ν	%	Ν	%
Self-regulated Learning Habit	136	54.40	114	45.60

From the above table 2, it is found that 54.40% of high school students have low achievement, and 45.60% of them have high levels of achievement (fig.2).



Figure 2: Level of Achievement of High School Students

# 4.1. Differential Analysis

Null Hypothesis-1: There is no significant difference between male and female high school students in their self-regulated learning habits.

Table 3: Significant difference between Male and Female High School Students in their Self-regulated learning habit

Gender	Ν	MEAN	SD	Calculated 't' Value	Table Value	Remark
Male	107	62.79	5.09			Not
Female	143	63.07	3.95	0.46	1.96	Significant

The above table 3 reveals that the mean score of the male high school students in the self-regulated learning habit is 62.79, and that of the female students is 63.07. The respective standard deviations are 5.09 and 3.95. It can also be seen that the calculated value, 0.46, is less than the table value, 1.96, at the 0.05 level. It indicates that there is no significant difference between male and female high school students in their self-regulated learning habits. Hence, the framed null hypothesis is accepted [17]. This indicates that male and female high school students do not differ significantly in their self-regulated learning habits.

There is no significant difference between male and female high school students in their self-regulated learning habits (fig.3).





Null Hypothesis-2: There is no significant difference between Urban and Rural high school students in their self-regulated learning habits.

Locality	N	MEAN	SD	Calculated 't' Value	Table Value	Remark
Urban	125	36.23	5.04			Not
Rural	125	35.90	4.09	0.56	1.96	Significant

 Table 4: Significant difference between the Urban and Rural areas locality High School Students with regard to their Self-regulated learning habit

The above table 4 reveals that the mean score of the Urban high school students in the self-regulated learning habit is 36.23, and that of the rural students is 35.90. The respective standard deviations are 5.04 and 4.09. It can also be seen that the calculated value, 0.56, is less than the table value, 1.96, at the 0.05 level. It indicates that there is no significant difference between Urban and rural high school students in their self-regulated learning habits. Hence, the framed null hypothesis is accepted. This indicates that urban and rural high school students do not differ significantly in their self-regulated learning habits.

There is no significant difference between Urban and Rural high school students in their self-regulated learning habits (fig.4).



Figure 4: Significant difference between the Urban and Rural areas locality High School Students with regard to their Self-regulated learning habit

Null Hypothesis-3: There is no significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habits.

 Table 5: Significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habit

Variable	Source	df	Mean Squares	Calculated f value	Table f value at 5% level	Remarks
Types of	Between groups	2	16.901	2 217	2.25	Significant
Management	Within groups	247	7.296	2.517	2.23	Significant

It is evident from Table 5 above that the mean squares of high school students with regard to types of management are 16.901 and 7.296, respectively, and their corresponding degrees of freedom are 2 and 147. The computed 'f' value of 2.317 is greater than 2.25 at 0.05 levels. Hence, the null hypothesis is rejected. It's concluded that there is a significant difference among high school students studying in boys, girls, and co-education schools in their self-regulated learning habits.

There is no significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habits (fig.5).



Figure 5: Significant difference among high school students studying in government, aided, and matriculation schools in their self-regulated learning habit

Null Hypothesis-4: There is no significant difference among high school students studying in boys, girls, and co-education schools in their self-regulated learning habits.

 Table 6: Significant difference among the High School Students studying in boys, girls, and Co-education Schools in their

 Self-regulated learning habit

Variable	Source	df	Mean Squares	Calculated f value	Table f value at 5% level	Remarks
Nature of	Between groups	2	48.468		3.00 Not Significant	
School	Within groups	147	58.790	0.824	5.09	Not Significant

It is evident from the above table 6 the mean among high school students in their self-regulated learning habits with regard to their nature of schools are 48.468 and 58.790, respectively; their corresponding degrees of freedom are 2 and 147. The computed 'f' value 0.824 is less than 3.09 at 0.05 levels. Hence, the null hypothesis is accepted, and it is concluded that the higher secondary school teachers do not differ significantly in their self-regulated learning habits with regard to the nature of schools.

There is no significant difference among high school students studying in boys, girls, and co-education schools in their self-regulated learning habits (fig.6).





Null Hypothesis-5: There is no significant difference among high school students belonging to nuclear and joint families in their self-regulated learning habits.

Family Type	Ν	Mean	SD	Calculated 't' Value	Table Value	Remark
Nuclear	213	108.64	15.37			Not
Joint	37	144.46	212.88	1.02	1.96	Significant

 Table 7: Significant difference between the High School Students belonging to nuclear and joint families in their Self-regulated learning habit

The above table 7 reveals that the mean scores of the high school students from the nuclear family in the self-regulated learning habit are 108.64, and that of the joint family students is 144.46. The respective standard deviations are 15.37 and 212.88. It can also be seen that the calculated value, 1.02, is less than the table value, 1.96, at the 0.05 level. It indicates that there is no significant difference between high school students from nuclear and joint families in their self-regulated learning habits. It is concluded that there is no significant difference among high school students belonging to nuclear and joint families in their self-regulated learning habits. Hence, the framed null hypothesis is accepted. This indicates that the nuclear and joint high school students do not differ significantly in their self-regulated learning habits.

There is no significant difference among high school students belonging to nuclear and joint families in their self-regulated learning habits (fig.7).





Null Hypothesis-6: There is no significant difference among high school students studying in Tamil and English medium in their self-regulated learning habits.

 Table 8: Significant difference between high school students studying in Tamil medium and English medium in their self-regulated learning habit

Medium of	Ν	Mean	SD	Calculated 't'	Table Value	Remark
Instruction				Value		
Tamil	139	110.77	17.20			Not
English	111	117.91	123.51	0.60	1.96	Significant

The above table 8 reveals that the mean score of the high school students from Tamil medium in the self-regulated learning habit is 110.77, and that of the English Medium students is 117.91. The respective standard deviations are 17.20 and 123.51. It can also be seen that the calculated value, 0.60, is less than the table value of 1.96 at the 0.05 level. It indicates that there is no

significant difference between high school students of Tamil and English in their self-regulated learning habits. It is concluded that there is no significant difference among high school students belonging to Tamil and English medium students in their self-regulated learning habits. Hence, the framed null hypothesis is accepted. This indicates that Tamil and English medium-high school students do not differ significantly in their self-regulated learning habits.

There is no significant difference among high school students studying in Tamil and English medium in their self-regulated learning habits (fig.8).





Null Hypothesis -7: There is no significant difference between the high school students whose parents are school-educated and graduates in their self-regulated learning habits.

 Table 9: Significant difference between high school students whose parents are school-educated and graduates in their self-regulated learning habit

Parental Education	Ν	Mean	SD	Calculated 't' Value	Table Value	Remark
School	228	115.64	86.82			
College	22	96.36	12.46	3.04	1.96	Significant

The above table 9 reveals that the mean scores of the high school student's parental education and students whose parents completed school in the self-regulated learning habit is 115.64, and that of college completed is 96.36. The respective standard deviations are 86.82 and 12.46. It can also be seen that the calculated value of 3.04 is higher than the table value of 1.96 at the 0.05 level. It indicates that there is a significant difference between high school students with self-regulated learning habits whose parents are school-educated and graduates with self-regulated learning habits. It is concluded that there is a significant difference among high school students with self-regulated learning habits whose parents are school-educated and graduates in their self-regulated learning habit. Hence, the framed null hypothesis is rejected. This indicates that the school-completed and graduated parents of high school students differ significantly in their self-regulated learning habits.

There is no significant difference between the high school students whose parents are school-educated and graduates in their self-regulated learning habits (fig.9).





Null Hypothesis-8: There is no significant difference among the high school students whose parents are private employees, government employees, and self-employed in their self-regulated learning habits.

 Table 10: Significant difference among the high school students whose parents are Private Employees, Government Employees, and Self-employed in their self-regulated learning habit

Parental Occupation	Mean	SSb	SSw	df	Calculated 'F' Value	Table Value	Remark
Private	108.70						
Government	188.20	88034.40	1633893.70	2,247	6.65	3.03	Significant
Self-employed	109.51						

The above table 10 reveals that the mean scores of the high school students' parental occupation and students whose parents are private workers in the self-regulated learning habit are 108.70 and that of government is 188.20, and self-employed is 109.51. It can also be seen that the calculated value, 6.65, is higher than the table value of 3.03 at the 0.05 level. It indicates that there is a significant difference between high school students' self-regulated learning habit in their self-regulated learning habit. It is concluded that there is a significant difference among high school students in their self-regulated learning habit whose parents are Private Employees, Government Employees, Government Employees, and Self-employees, and Self-employed in their self-regulated learning habit. Hence, the framed null hypothesis is rejected. This indicates that the parents who are Private Employees, Government Employees, and Self-employed is the parents who are Private Employees, Government Employees, and self-employees in their self-regulated learning habit. Hence, the framed null hypothesis is rejected. This indicates that the parents who are Private Employees, Government Employees, and Self-employed in their self-regulated learning habits.

There is no significant difference among the high school students whose parents are private employees, government employees, and self-employed in their self-regulated learning habits (fig.10).





From the above table 10, it is found that the calculated 'F' value is greater than the table value for 2 247 degrees of freedom at a 5% level of significance. Hence, the null hypothesis is rejected. It is concluded that there is a significant difference among the high school students whose parents are private employees, government employees, and self-employed in their self-regulated learning habits.

Null Hypothesis-9: There is no significant difference between male and female high school students in their achievement.

Gender	Ν	MEAN	SD	Calculated 't' Value	Table Value	Remark
Male	107	62.13	17.14			Not
Female	143	60.48	16.26	0.77	1.96	Significant

Table 11: Significance of difference between Male and Female High School Students in their achievement

The above table 11 reveals that the mean scores of the achievement of male students are 62.13, and that of the female students are 60.48. The respective standard deviations are 17.14 and 16.26. It can also be seen that the calculated value, 0.77, is less than the table value, 1.96, at the 0.05 level. It indicates that there is no significant difference between Male and Female High School Students in their achievement. It is concluded that there is no significant difference between male and female high school students in their achievement. Hence, the framed null hypothesis is accepted. This indicates that male and female students do not differ significantly in their achievement.

There is no significant difference between male and female high school students in their achievement (fig.11).



Figure 11: Significance of Difference between Male and Female High School Students in their Achievement

Null Hypothesis-10: There is no significant difference between Urban and Rural high school students in their achievements.

Locality	Ν	MEAN	SD	Calculated 't' Value	Table Value	Remark
Urban	125	35.97	4.65			Not
Rural	125	36.17	4.56	0.34	1.96	Significant

Table 12: Significant difference between Urban and Rural high school students in their achievement

According to table 12, urban high school students have mean achievement test scores of 35.97, whereas rural students have mean test scores of 36.17. Each has a standard deviation of 4.65, and the other is 4.56. It is also clear that at the 0.05 level, the estimated value of 0.34 is lower than the table value of 1.96. This data suggests that there is no appreciable gap between the academic performance of urban and rural high school students. High school students in urban and rural areas do not differ much in academic performance, the study's authors say. Consequently, the stated null hypothesis is accepted. This suggests that there is no appreciable gap in the academic performance of urban and rural and rural high school students.

There is no significant difference between Urban and Rural high school students in their achievement (fig.12).



Figure 12: Significant difference between Urban and Rural high school students in their Achievement

Null Hypothesis-11: There is no significant difference among high school students studying in government, aided, and matriculation schools in their achievements.

 Table 13: Significant difference among high school students studying in government, aided, and matriculation schools in their achievement

Type of School	Mean	SSb	SSw	df	Calculated 'f' Value	Table Value	Remark
Government	59.99						
Aided	59.29	7794.14	61039.40	2,247	15.77	3.03	Significant
Matriculation	82.50						

It is evident from the above table 13 the mean among high school students in their achievement with regard to their type of schools are 59.99, 59.29, and 82.50, respectively; its corresponding degrees of freedom are 2 and 147. The computed 'f' value of 15.77 is greater than 3.03 at 0.05 levels. Hence, the null hypothesis is rejected, and it is concluded that the higher secondary school teachers differ significantly in their achievement with regard to their type of schools.

There is no significant difference among high school students studying in government, aided, and matriculation schools in their achievements (fig.13).





Null Hypothesis-12: There is no significant difference among high school students studying in boys, girls and co-education schools in their achievement.

 Table 14: Significant Difference among the High School Students Studying in boys, girls, and Co-education Schools in their achievement

Nature of School	Mean	SSb	SSw	df	Calculated 'F' Value	Table Value	Remark
Boys	60.68						Not
Girls	59.34	720.39	68113.15	2,247	1.31	3.03	Significant
Co-education	63.10						

Table 14 shows that the means of high school students' accomplishments in relation to the types of schools they attend are 60.68, 59.34, and 63.10, with 2 and 147 degrees of freedom, respectively. The calculated value of f (1.31), when compared to 3.03, is less than 0.05. As a result, we accept the null hypothesis and draw the conclusion that there is no substantial difference in achievement between teachers working in different types of high schools.

There is no significant difference among high school students studying in boys, girls and co-education schools in their achievement (fig.14).



Figure 14: Significant difference among the High School Students Studying in boys, girls, and Co-education Schools in their Achievement

Null Hypothesis-13: There is no significant difference among high school students belonging to nuclear and joint families in their achievement.

 Table 15: Significant difference between the High School Students belonging to nuclear and joint families in their achievement

Family Type	Ν	Mean	SD	Calculated 't' Value	Table Value	Remark
Nuclear	213	61.58	16.82			Not
Joint	37	58.92	15.45	0.95	1.96	Significant

As can be seen in Table 15, the average high school GPA for students from nuclear families is 61.58, whereas that of students from joint families is 58.92. Standard deviations for each group are 16.82 and 15.45. The 0.05 level also reveals that the calculated value, 0.95, is smaller than the table value, 1.96. This finding suggests that there is no discernible performance gap between pupils from nuclear and joint-family households. The results show that high school kids from either nuclear or joint families perform similarly well. Consequently, the stated null hypothesis is accepted. This suggests that there is no discernible performance gap between pupils from nuclear and joint-family households.

There is no significant difference among high school students belonging to nuclear and joint families in their achievements (fig.15).



**Figure 15:** Significant difference between High School Students belonging to nuclear and joint families in their Achievement Null Hypothesis-14: There is no significant difference between high school students studying in Tamil and English medium in their achievements.

Table 16: Significan	t difference betwee	n high schoo	l students s	tudying in	Tamil	medium	and English	medium i	in their
			achievemen	nt					

Medium of Instruction	Ν	Mean	SD	Calculated 't' Value	Table Value	Remark
Tamil	139	61.04	15.86	0.15	1.06	
English	111	61.36	17.61	0.15	1.96	Not Significant

According to table 16, high school pupils who were taught in either Tamil or English have similar mean accomplishment scores of 61.04 and 61.36, respectively. 15.86 and 17.61 are the corresponding standard deviations. It is also clear that at the 0.05 level, the estimated value of 0.15 is lower than the table value of 1.96. This data suggests that there is no appreciable proficiency gap between Tamil and English medium students. The results show that there is no statistically significant gap in academic performance between Tamil- and English-medium high school students. Consequently, the stated null hypothesis is accepted. According to these results, there is no discernible proficiency gap between Tamil and English medium students.

There is no significant difference between high school students studying in Tamil and English medium in their achievements (fig.16).





Null Hypothesis-15: There is no significant difference between the high school students whose parents are school-educated and graduates in their achievements.

Parental Education	Ν	Mean	SD	Calculated 't' Value	Table Value	Remark
School	228	60.34	16.41	2.56	1.96	Significant
College	22	69.91	16.76			

 Table 17: Significant difference between high school students, their self-regulated learning habits, whose parents are school educated and graduates in their achievement

High school pupils whose parents did not complete high school have a mean achievement score of 60.34, whereas those whose parents did complete high school had a mean achievement score of 69.91, as shown in table 17. The variances are 16.41% and 16.76%, respectively. The estimated value of 2.56 is likewise higher than the table value of 1.96 when compared at the 0.05 level. It suggests that there is a large gap between the accomplishments of parents who did and did not attend high school. High school pupils with college-educated parents do not significantly outperform their peers who do not have such parents. Therefore, the stated null hypothesis must be accepted. This suggests that there is a sizable accomplishment gap between the children of college graduates and non-graduates in high school.

There is no significant difference between the high school students whose parents are school-educated and graduates in their achievements (fig.17).





Null Hypothesis-16: There is no significant difference among the high school students whose parents are Private employees, government employees and self-employed in their achievements.

 Table 18: Significant difference among the high school students whose parents are Private Employees, Government Employees, and Self-employed in their Achievement

Parental Occupation	Mean	SSb	SSw	df	Calculated 'F' Value	Table Value	Remark
Private	61.04	605 62	69127.01	2 247	1.26	2.02	Not Significant
Government	67.73	093.02	08137.91	2,247	1.20	3.03	Significant
Self-employed	60.60						

Table 18 shows that the means of high school kids' accomplishments in relation to their parents' professions are 61.04, 67.73, and 60.60, with 2 and 147 degrees of freedom, respectively. 1.26 is less than 3.03 at the 0.05 level, as calculated by the 'f'

statistic. As a result, we accept the null hypothesis and draw the conclusion that there is no substantial difference in achievement among high school teachers based on their parents' professions.

There is no significant difference among the high school students whose parents are Private employees, government employees and self-employed in their achievement (fig.18).



Figure 18: Significant difference among the high school students whose parents are Private Employees, Government Employees, and Self-employed in their Achievement

# 4.2. Correlation Analysis

Null Hypothesis-17: There is no significant relationship between the self-regulated learning habit and achievement of high school students.

	Ν	Calculated	Table	Remark
Variables		't' Value	Value	
Self-regulated Learning	250	0.582	0.110	Significant
Achievement	250	0.550	0.110	Significant

Table 19: Relationship between the self-regulated learning habit and achievement of High school students

The estimated 'r' value for 248 degrees of freedom is bigger than the table value at the 5% level of significance, as shown in table 19. Thus, it can be concluded that H0 is false. High school students can benefit greatly from developing the habit of self-regulated learning, as the results show.

There is no significant relationship between the self-regulated learning habit and achievement of high school students (fig.19).



Figure 19: Relationship between the self-regulated learning habit and achievement of High school students

## 5. The Major Findings of the Study

Only 30.4% of high school pupils have weak self-regulated study habits, whereas the remaining 69.6% do. Of all high school students, 54.40 percent have low achievement, whereas 45.60 percent have good achievement. High school students' ability to

self-regulate their own learning does not differ much between males and females. High school students in urban and rural locations do not differ much when it comes to their use of self-regulated learning strategies. High school pupils' ability to selfregulate their learning does not vary significantly depending on whether they attend a government, aided, or matriculation school. Self-regulated learning strategies are not significantly different amongst male, female, or coed high school pupils. Students from both nuclear and joint homes show similar levels of self-regulation in the classroom. Self-regulated learning strategies are not significantly different between Tamil and English medium high school students. High school pupils whose primary language is not English have significantly different study habits than their Tamil-medium counterparts. High school kids whose parents work in the private sector, the public sector, or are self-employed have quite different levels of selfregulation when it comes to their own education. The academic performance of male and female high school students does not differ much. High school students in urban and rural areas do not differ significantly in terms of academic performance. The academic performance of high school pupils attending public, assisted, and matriculation schools varies widely. There is no discernible performance gap between boys', girls', and co-ed high school students. High school kids that are part of either nuclear or joint families perform similarly academically. High school kids that are part of either nuclear or joint families perform similarly. High school children whose parents did not complete high school and dropouts had a huge academic achievement gap. High school pupils who have parents in the private sector, the public sector, or who are self-employed all perform similarly. The ability to study on one's own accord correlates strongly with success in high school.

#### 6. Conclusion

High school pupils with good self-regulated learning habits perform well academically, whereas those with poor self-regulated learning habits perform poorly. High school students' habits of self-regulated learning do not differ significantly based on factors such as gender, geographic location, school type (including co-ed), or family background. High school students whose first language is English have significantly different self-regulated learning habits than their Tamil-medium counterparts. High school kids whose parents work in the private sector, the public sector, or are self-employed have quite different levels of self-regulation when it comes to their own education. There is a large gap in academic performance between kids attending government, aided, and matriculation high schools, according to a recent study. High school pupils whose parents did not finish college perform significantly lower than their peers whose parents did. High school pupils' academic performance does not differ significantly based on factors such as gender, region, school type (including co-ed), or family background. High school pupils who have parents in the private sector, the public sector, or who are self-employed all perform similarly.

## **6.1. Educational Implications**

The teachers are asked to raise awareness about self-regulated learning habits. It should be conveyed that self-regulated learning gives a high level of achievement. The students are motivated to use various techniques to hike their academic achievement, among which self-regulated learning habit is one. We should make clear to them that achieving excellence requires practice. For that, it requires planning, effort, and persistence over time. Only self-regulated learning supports this process. It allows students to become autonomous learners who can pursue their interests.

Acknowledgment: The support of all my co-authors is highly appreciated.

**Data Availability Statement:** This research contains data related to multicultural education and diagnostic information profiling preliminary findings.

Funding Statement: No funding has been obtained to help prepare this manuscript and research work.

**Conflicts of Interest Statement:** No conflicts of interest have been declared by the author(s). Citations and references are mentioned as per the used information.

Ethics and Consent Statement: The consent has been obtained from the colleges during data collection and has received ethical approval and participant consent

## References

- B. J. Zimmerman, "Attaining self-regulation: A social cognitive perspective," in Handbook of self-regulation research and applications, M. Boekaerts, P. R. Pintrich, and M. Zeidner, Eds. San Diego, California: Academic Press, pp. 13-39, 2000.
- K. Velmurugan and V. Balakrishnan, "Achievement Motivation Of Higher Secondary Students In Relation To Locality And Type Of Family," International Journal of Teacher Educational Research, vol. 2, no. 5, 2013.

- 3. O. P. Verma and S. N. Upadhyay, "Some Psychological Correlates of School Achievement," Indian Psychological Review, vol. 20, no. 4, pp. 30–34, 1981.
- 4. T. Vez, "Parental style and academic achievement among the students," International Journal of Multidisciplinary Research Review, no. 5, 2011.
- 5. V. F. L. Voorhis, "Interactive Homework in Middle School: Effects on Family Involvement and Science Achievement," The Journal of Educational Research, vol. 96, pp. 323–338, 2003.
- 6. B. Anderton, "Using the online course to promote self-regulated learning strategies in pre-service teachers," Journal of Interactive Online Learning, vol. 5, no. 2, 2006.
- 7. E. Azizi and K. Yeshodhara, "Self-regulated learning strategies among bachelor degree science students of different types of colleges- A comparative study," Indian Streams Research Journal, no. 3, pp. 7–12, 2013.
- 8. M. Boekaerts, "Self-regulated learning: where we are today," Int. J. Educ. Res., vol. 31, no. 6, pp. 445–457, 1999.
- 9. P. R. Pintrich, "The role of goal orientation in self-regulated learning," in Handbook of Self-Regulation, Elsevier, 2000, pp. 451–502.
- 10. C.-C. Shih and J. A. Gamon, "Relationships among learning strategies, patterns, styles, and achievement in Webbased courses," J. Agric. Educ., vol. 43, no. 4, pp. 1–11, 2002.
- 11. J. Walter, The impact of gender and pedagogy on the development of selfregulated learning strategies in undergraduate engineering classrooms (Unpublished master's thesis). US, 2012.
- 12. V. Kumari, "A study on relationship of Academic anxiety, and Achievement motivation with Academic achievement," Edu Tracks, vol. 9, no. 5, 2010.
- 13. U. Devi, "Academic achievement; A study on the relationship between Problem solving ability and academic achievement of secondary school students," Journal of Educational Research and Extension, vol. 46, no. 26, 2009.
- F. S. Azar, "Self- efficacy, achievement motivation and academic procrastination as predictors of academic achievement in pre-college students," in Global Summit on Education, pp. 173–178, 2013.
- K. Maheswari and M. Aruna, "Gender difference and achievement motivation among adolescent school students," International Journal of Applied Research, vol. 2, no. 1, pp. 149–152, 2016.
- 16. R. C. Pandey, "Academic achievement as related to achievement motivation and parent background," Indian Psychological Review, vol. 70, no. 4, pp. 2–3, 2008.
- 17. S. L. Pandey and A. Faiz, "Achievement motivation with reference to sex differences," Journal of Community Guidance & Research, vol. 24, no. 1, pp. 40–45, 2007.