

TYPE OF SCHOOL, LOCALITY AND GENDER AS DETERMINANTS OF SELF-REGULATED LEARNING AMONG STUDENTS: AN EMPIRICAL STUDY

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ABSTRACT

The present study was undertaken to examine the level of Self-Regulated Learning among 11th graders in relation to type of school, locality and gender. Self-Regulated Learning was treated as dependent variable whereas type of school (Govt. & Private), locality (Rural & Urban) and gender (Male & Female) were treated as independent variables. Descriptive survey method was employed for the present study. A sample of 400 students was taken using multi-stage stratified random sampling technique. Self-Regulated Learning Scale by Gupta and Mehtani (2017)^[5] was used to collect the data. Three-Way ANOVA with 2×2×2 factorial design was used to analyse the data. Levene's Test of Homogeneity of Variance was also applied to test the assumption of homogeneity of variance for ANOVA. Main effect of type of school, locality and gender on Self-Regulated Learning among 11th graders was found to be significant. No significant interaction effects of type of school & locality; and type of school & gender were reported on self-regulated learning among 11th graders. On the other side, significant double interaction effect of locality & gender was reported on self-regulated learning among 11th graders. Triple interaction effect of type of school, locality and gender on self-regulated learning among 11th graders was found to be significant. *Motivational programmes and activities along with self-regulated learning instructional strategy should be integrated within the curriculum, which can promote self-regulated learning among students.*

Keywords: Gender, Locality, Self-Regulated Learning and Type of school.

INTRODUCTION

Earlier it was thought that success depends upon intelligence which is fixed and everyone take birth with a certain amount of intelligence which determines the success. There is not much that can be done in this regard. But after years of research, educators have found that intelligence itself is the result of how much information students learn along with the strategies they use to control their thinking and learning. Learning is an activity that students do for themselves in a proactive way rather than as a covert event that happens to them in reaction to teaching. It cannot be viewed as simple acquisition of knowledge and skills but it is conceptualised as a process whereby students actively construct their own knowledge and skills and also manage their learning. To be a successful learner requires more than simply reading and writing i.e. use of appropriate strategies to manage motivation, behavior and learning. Successful learners are not simply those individuals who know more than others, in fact, they are those who have more effective and efficient learning strategies for assessing and using their knowledge. They have capacity to motivate themselves, and can monitor and change their behaviours even when learning does not occur. Regulation is one among those strategies which determine his/her success in learning. Successful learners are able to regulate or control the factors influencing learning. They establish optimum conditions for learning and remove obstacles that interfere with their learning. No matter how difficult the material or the quality of instruction, self-regulatory students find a way to excel.

Self-regulation is a broad term, denoting any kind of regulation of the self by the self. It refers to self-altering its own responses or inner states. Typically this takes the form of overriding one response or behavior and replacing it with a less common but more desired response. Technically speaking, a self does not regulate itself directly, but it may control behaviors, feelings, and thoughts that comprise it. In this sense, self-regulation refers to the regulation of processes by the self. Regulation of the self also falls under the rubric of self-regulation, but note that this may mean the regulating is done by something (or someone) else. Self-regulated learning is an active constructive process whereby learners set goals for their learning and monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features of the environment (Pintrich and Zusho, 2002)^[15]. It is the capacity to plan, guide and monitor one's behaviour flexibly in the face of changing circumstances (Brown,

Miller, and Lawendowski, 1999)^[2]. Schunk and Ertmer (2000)^[16] defined that self-regulated learning includes several processes such as: setting goals for learning, concentrating on instruction, using effective strategies to organise ideas, using resources effectively, monitoring performance, managing time effectively and holding positive beliefs about one's capabilities.

Self-regulation includes the ability to delay gratification, such as when a child overrides the desire to eat the cookie on her plate and waits instead for the two in the oven. Social cognitive theory views self-regulation as comprising of three sub processes: self-observation, self-judgment, and self-reaction (Bandura, 1986)^[1]. These sub processes are not mutually exclusive events; they interact with and influence each other. Self-regulation in the academic contexts entails a "multidimensional construct, including cognitive, meta-cognitive, motivational, behavioural, and environmental processes that learners can apply to enhance academic achievement" (Dornyei, 2005)^[4]. It allows students to guide their behaviors by constantly making necessary adjustments to accomplish desirable outcomes." (Larrivee, 2009)^[9]. Self-regulated learners begin with a given task; evaluate the task and set goals according to the information from the evaluation; use strategies to meet the goal; monitor their progress toward the goal and evaluate the use of the strategy; and reinterpretation of the task takes place regarding information attained from internal and external feedback (Butler and Winne, 1995)^[3]. Although self-regulation has typically implied regulation of behavior by the self in pursuit of a conscious intention or purpose, yet some forms of self-regulation occur without conscious awareness or active intervention by the self.

Researchers have demonstrated that there exists a positive relationship between self-regulation and academic performance. Student's self-regulation is generally accepted as an important construct in student success (Williams and Hellman, 2004)^[17]. Pelt (2008)^[14] found that there exists no significant relationship between self-regulated learning and academic achievement. However, according to the results high-achievers used more self-regulated learning and more advanced strategies than the low achieving students. Leutwyler and Merki (2009)^[10] concluded that school and instructional processes can explain a remarkable part of students' development in self-regulated learning. Inan (2013)^[6] revealed that there were significant positive correlations between three dimensions of self-regulated learning strategies (i.e. motivation and

action to learning, planning and goal setting, strategies for learning and assessment) and grade point average scores of the participants. Kirwan, Lounsbury and Gibson (2014)^[8] found that self-regulation is significantly related to four of the big five traits: agreeableness, conscientiousness, emotional stability, and openness - as well as five narrow personality traits: sense of identity, optimism, tough-mindedness, work drive, and major satisfaction. Lin and Gan (2014)^[11] in their research found that the listeners' metacognitive awareness was closely linked to their self-regulated learning. Zheng (2016)^[18] concluded that self-regulated learning scaffolds in computer-based learning environments generally produced a significantly positive effect on academic performance.

Earlier studies in the area of self-regulated learning were either conducted on international level or in western cultures. Hardly any research has been done in India which focuses on self-regulated learning among students. Home environment, gender, type of school, parental support, locality, study habits, academic stream etc. have their significant effect on self-regulated learning among students. Not a single research is there to know the main effects and interaction effects of these variables on self-regulated learning among school students. Thus, the present study is an endeavor to investigate the self-regulated learning among school students with reference to type of school, locality and gender.

VARIABLES USED

- **Dependent Variable:** Self-Regulated Learning
- **Independent Variables:** (a) Type of School (b) Locality and (c) Gender.

OBJECTIVES OF THE STUDY

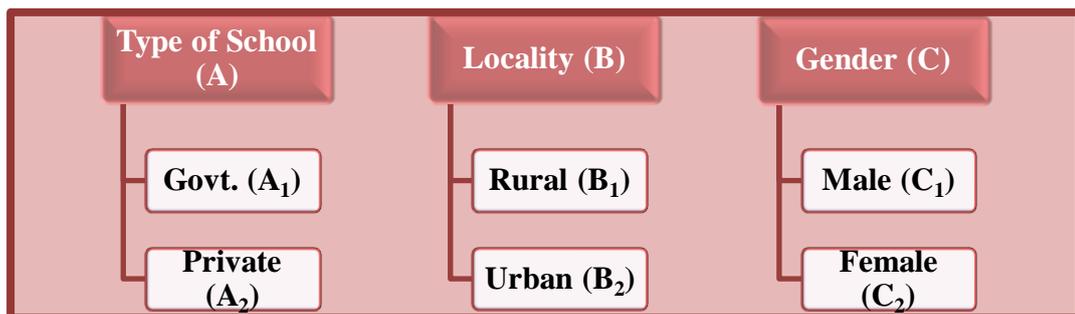
1. To study the main effect of (a) type of school (b) locality and (c) gender on self-regulated learning among 11th graders.
2. To study the interaction effect of (a) type of school & locality; (b) locality & gender and (c) type of school & gender on self-regulated learning among 11th graders.
3. To study the interaction effect of type of school, locality and gender on self-regulated learning among 11th graders.

HYPOTHESES OF THE STUDY

- H₀₁** There exists no significant effect of (a) type of school (b) locality and (c) gender on self-regulated learning among 11th graders.
- H₀₂** There exists no significant interaction effect of (a) type of school & locality; (b) locality & gender and (c) type of school & gender on self-regulated learning among 11th graders.
- H₀₃** There exists no significant interaction effect of type of school, locality and gender on self-regulated learning among 11th graders.

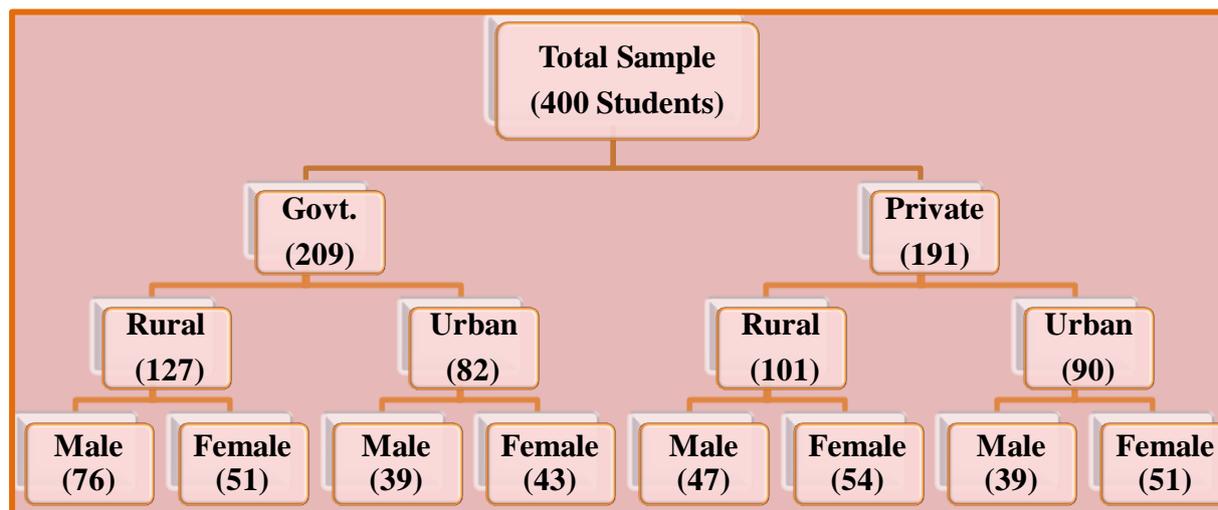
DESIGN AND METHODOLOGY

In the present study, descriptive survey method was used. The 2×2×2 factorial randomized group design was used to analyze the data. All the independent variables i.e. type of school (Govt. & Private), locality (Rural & Urban) and gender (Male & Female) were varied at the two levels which have been shown below in the schematic design.



SAMPLE

A sample of 400 students (11th graders) was taken using multi-stage stratified random sampling technique. Distribution of sample, on the basis of type of school, locality and gender has been depicted below:



TOOL USED

Self-Regulated Learning Scale by Gupta and Mehtani (2017)^[5] was used to assess the level of self-regulated learning among students. This scale consists of 48 statements to measure self-regulated learning of the students with six dimensions namely: self-awareness, planning and goal-setting, self-monitoring, self-control, self-evaluation and self-modification. Test-retest reliability of the scale was 0.88 and Split-Half reliability was 0.982. The scale has high construct validity which ranged from 0.503 to 0.596.

STATISTICAL TECHNIQUES USED

The data was analysed using descriptive as well as inferential statistics. The Three-Way Analysis of Variance (ANOVA) with $2 \times 2 \times 2$ factorial design was computed using SPSS version 20 to study the main effect and interaction effects of the independent variables i.e. type of school, locality and gender on self-regulated learning among 11th graders. Levene's Test of Homogeneity of Variance was used to test the assumption of homogeneity of variance before applying Three-Way ANOVA. Wherever F-value was found significant, 't'-test was employed for further investigation.

DATA ANALYSIS AND DISCUSSION

The objectives of the present study was to find out the main and interaction effects of type of school, locality and gender on self-regulated learning among students. For this, the data was subjected to analysis of variance (ANOVA) of a $(2 \times 2 \times 2)$ factorial study with a randomized group design. The independent variables type of school, locality and gender were coded as A, B, C respectively and were varied into two ways as: Govt. (A_1) & Private (A_2); Rural (B_1) & Urban (B_2);

and Male (C₁) & Female (C₂). The Mean and S.D of different sub-samples have been presented in the Table-1 and Fig.1. The summary of ANOVA (2×2×2) has also been presented in Table-2, which is analyzed in terms of main effects and interaction effects.

Table-1

Means and SDs of Sub Samples of 2×2×2 Design for Self-Regulated Learning among 11th graders in relation to Type of School (A), Locality (B) and Gender (C)

Type of School (A)	Locality (B)	Male (C ₁)	Female (C ₂)
Govt. (A₁)	Rural (B ₁)	N= 76 Mean= 132.01 SD= 20.393	N= 51 Mean= 142.00 SD= 15.960
	Urban (B ₂)	N= 39 Mean= 145.26 SD= 19.118	N= 43 Mean= 152.40 SD= 19.591
Private (A₂)	Rural (B ₁)	N= 47 Mean= 135.21 SD= 19.612	N= 54 Mean= 147.33 SD= 16.206
	Urban (B ₂)	N= 39 Mean= 163.46 SD= 16.854	N= 51 Mean= 157.14 SD= 20.948

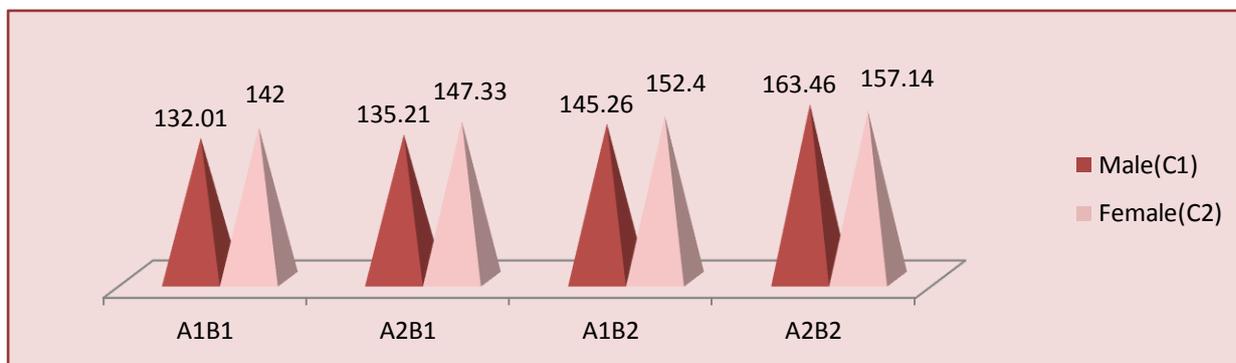


Fig. 1: Mean Scores of Sub Samples of 2x2x2 Design for Self-Regulated Learning among 11th graders in relation to Type of School, Locality and Gender

Table-2**Summary of Three -Way ANOVA (2x2x2 Factorial Design) for Self-Regulated Learning among 11th graders in relation to Type of School, Locality and Gender**

Sources of Variance	df	Sum of Squares (SS)	Mean Sum of Squares (MSS)	F-ratios
A (Type of School)	1	5944.510	5944.510	16.851**
B (Locality)	1	22829.431	22829.431	64.715**
C (Gender)	1	3151.772	3151.772	8.934**
A x B Interaction	1	1246.298	1246.298	3.533 (NS)
B x C Interaction	1	2719.637	2719.637	7.709**
C x A Interaction	1	769.961	769.961	2.183 (NS)
A x B x C Interaction	1	1471.648	1471.648	4.137*
Between Cells	7	179423.878	
Within Cells	392	138284.306	352.766	
Total	399			

** Significant at 0.01 level

* Significant at 0.05 level

NS= Not Significant

Main Effect of Type of School, Locality and Gender on Self-Regulated Learning among 11th graders**Type of School (A)**

From the Table-2, it is clear that F- ratio (16.851) for the main effect of type of school on self-regulated learning among 11th graders is significant at 0.01 level leading to conclusion that type of school has a significant effect on self-regulated learning among 11th graders. Therefore, the null hypothesis H_{01} (a), "There exists no significant effect of type of school on self-regulated learning among 11th graders" is **rejected**. The present finding is in consonance with the finding of Kadiravan (2012)^[7] who also found that type of school has a significant effect on self-regulated learning among adolescents.

Locality (B)

It is also observed from the Table-2 that F- ratio (64.715) for the main effect of locality on

self-regulated learning among 11th graders is significant at 0.01 level which indicates that locality has a significant effect on self-regulated learning among 11th graders. Therefore, the null hypothesis H_{01} (b), "There exists no significant effect of locality on self-regulated learning among 11th graders." is **rejected**. The finding is similar with the result of Mulia (2015)^[12] who also found that there exists no significant effect of locality on self-regulated learning.

Gender (C)

Further, it is clear from the Table-2 that F- ratio (8.934) for the main effect of gender on self-regulated learning among students is significant at 0.01 level which shows that gender has a significant effect on self-regulated learning among 11th graders. Therefore, the null hypothesis H_{01} (b), "There exists no significant effect of gender on self-regulated learning among 11th graders." is **rejected**. This result is in consonance with the result of Pajares & Valiante (2002)^[13] who also found that gender has a significant effect on self-regulated learning.

Double Interaction effect of Type of School, Locality and Gender on Self-Regulated Learning among 11th graders

Type of School (A) x Locality (B)

It is evident from Table-2 that F-ratio between type of school and locality (3.533) is not significant at 0.05 level which indicates that type of school (A) and locality (B) do not interact with each other. Therefore, the null hypothesis H_{02} (a), "There exists no significant interaction effect of type of school and locality on self-regulated learning among 11th graders" is **accepted**.

Locality (B) x Gender (C)

Table-2 further concludes that F-ratio between locality and gender (7.709) has been found to be significant at 0.01 level which leads to the inference that locality (B) and gender (C) interact with each other. Therefore, the null hypothesis H_{02} (b), "There exists no significant interaction effect of locality and gender on self-regulated learning among 11th graders" is **rejected**. Further t-test was employed to find out the significance of difference between mean self-regulated scores for different groups. The results have been shown in the Table-3.

Table-3

't' values for Mean Self-Regulated Learning Scores among students for Different groups of Locality (B) x Gender (C)

Groups	N		Mean		SD		t-values
B ₁ C ₁ vs B ₂ C ₁	123	78	133.24	154.36	20.078	20.112	7.26**
B ₁ C ₂ vs B ₂ C ₂	105	94	144.74	154.97	16.232	20.369	3.89**
B ₁ C ₁ vs B ₂ C ₂	123	94	133.24	154.97	20.078	20.369	7.84**
B ₁ C ₂ vs B ₂ C ₁	105	78	144.74	154.36	16.232	20.112	3.47**
B ₁ C ₁ vs B ₁ C ₂	123	105	133.24	144.74	20.078	16.232	4.77**
B ₂ C ₁ vs B ₂ C ₂	78	94	154.36	154.97	20.112	20.369	0.197 (NS)

** Significant at 0.01 level

* Significant at 0.05 level

NS = Not Significant

B1 - Rural; B2 - Urban; C1 -Male; C2 -Female

Table 3 discloses that 't'-values 7.26, 3.89, 7.84, 3.47 and 4.77 for the groups (B₁C₁ vs B₂C₁); (B₁C₂ vs B₂C₂); (B₁C₁ vs B₂C₂), (B₁C₂ vs B₂C₁) and (B₁C₁ vs B₁C₂) respectively have been found to be significant at 0.01 level leading to the conclusion that these groups differ significantly on self-regulated learning. Table-3 further indicates that t-value of 0.197 has not been found to be significant which means urban male (B₂C₁) 11th graders and urban female (B₂C₂) 11th graders do not differ significantly with respect to self-regulated learning. From the mean scores it can be concluded that urban female (B₂C₂) 11th graders have slightly more self-regulated learning as compared to urban male (B₂C₁) 11th graders.

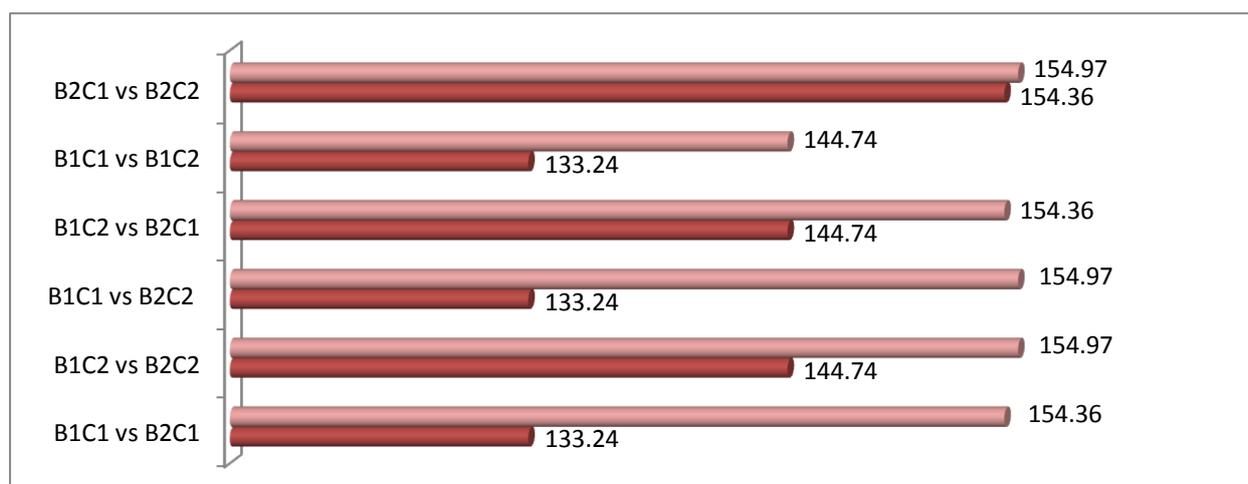


Fig. 2: Mean Scores for Interaction Effect of Locality & Gender on Self-Regulated Learning among 11th graders

The interaction effect of locality (B) and gender (C) on self-regulated learning among 11th

graders has been also presented in the form of line graph in Fig. 3 which shows a significant interaction effect of the two variables (locality and gender) on self-regulated learning among 11th graders. The figure showed that locality (B) and gender (C) intersect at a point.

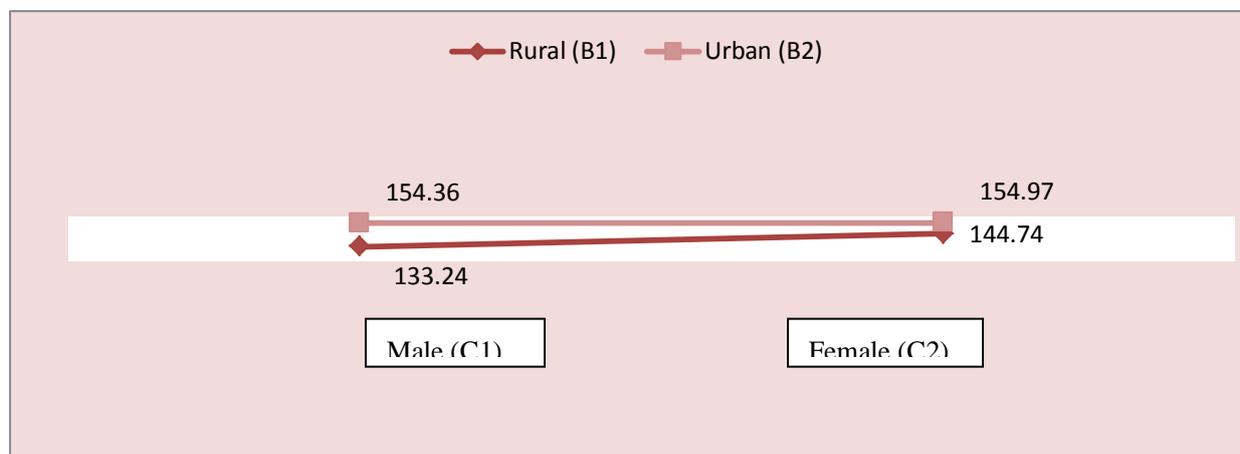


Fig. 3: Interaction effect of Gender & Locality on Self-Regulated Learning among 11th graders

Type of School (A) x Gender (C)

A glance at Table-2 indicates that F-ratio between type of school and gender is (2.183) which has been found to be not significant at 0.05 level leading to the conclusion that type of school (A) and gender (C) do not interact with each other. Therefore, the null hypothesis H_{02} (b), "There exists no significant interaction type of school and gender on self-regulated learning among 11th graders" is **accepted**.

Triple Interaction effect of Type of School, Locality and Gender on Self-Regulated Learning among 11th graders

Type of School x Locality x Gender (A x B x C)

The Table-2 further indicates that the F- ratio (4.137) for the interaction between type of school, locality and gender with respect to self-regulated learning among 11th graders is significant at 0.05 level which leads to the inference that type of school, locality and gender interact with each other. Therefore, the null hypothesis H_{03} , "There exists no significant interaction effect of type of school, locality and gender on self-regulated learning among 11th graders" is **rejected**. Further, t-test was employed to find out the difference in mean scores of self-regulated learning among 11th graders for different groups. The results for the same have been presented in the Table-4.

Table-4

t-values for Mean Scores of Self-Regulated Learning among 11th graders for Different Groups of Type of School x Locality x Gender (A x B x C)

Sr. No.	Groups	N		Mean		SD		t-values
1.	A ₁ B ₁ C ₁ vs A ₁ B ₁ C ₂	76	51	132.01	142.00	20.393	15.960	3.09**
2.	A ₂ B ₂ C ₁ vs A ₂ B ₂ C ₂	39	51	163.46	157.14	16.854	20.948	1.59 (NS)
3.	A ₁ B ₁ C ₁ vs A ₁ B ₂ C ₂	76	43	132.01	152.40	20.393	19.591	5.38**
4.	A ₁ B ₁ C ₂ vs A ₁ B ₂ C ₂	51	43	142.00	152.40	15.960	19.591	2.79**
5.	A ₁ B ₂ C ₁ vs A ₂ B ₁ C ₂	39	54	145.26	147.33	19.118	16.206	0.55 (NS)
6.	A ₁ B ₂ C ₂ vs A ₂ B ₂ C ₂	43	51	152.40	157.14	19.591	20.948	1.13 (NS)
7.	A ₁ B ₁ C ₁ vs A ₂ B ₂ C ₂	76	51	132.01	157.14	20.393	20.948	6.70**
8.	A ₁ B ₁ C ₂ vs A ₁ B ₂ C ₁	51	39	142.00	145.26	15.960	19.118	0.86 (NS)
9.	A ₂ B ₁ C ₁ vs A ₂ B ₂ C ₁	47	39	135.21	163.46	19.612	16.854	7.19**
10.	A ₁ B ₁ C ₁ vs A ₂ B ₁ C ₁	76	47	132.01	135.21	20.393	19.612	0.87 (NS)
11.	A ₁ B ₁ C ₂ vs A ₂ B ₁ C ₂	51	54	142.00	147.33	15.960	16.206	1.697 (NS)
12.	A ₁ B ₂ C ₂ vs A ₂ B ₂ C ₁	43	39	152.40	163.46	19.591	16.854	2.74**
13.	A ₁ B ₁ C ₂ vs A ₂ B ₂ C ₂	51	51	142.00	157.14	15.960	20.948	4.10**
14.	A ₁ B ₂ C ₁ vs A ₁ B ₂ C ₂	39	43	145.26	152.40	19.118	19.591	1.67 (NS)
15.	A ₁ B ₁ C ₁ vs A ₂ B ₁ C ₂	76	54	132.01	147.33	20.393	16.206	4.77**
16.	A ₁ B ₂ C ₁ vs A ₂ B ₂ C ₁	39	39	145.26	163.46	19.118	16.854	4.46**
17.	A ₁ B ₁ C ₂ vs A ₂ B ₁ C ₁	51	47	142.00	135.21	15.960	19.612	1.87 (NS)
18.	A ₁ B ₂ C ₁ vs A ₂ B ₂ C ₂	39	51	145.26	157.14	19.118	20.948	2.80**
19.	A ₁ B ₂ C ₂ vs A ₂ B ₁ C ₁	43	47	152.40	135.21	19.591	19.612	4.15**
20.	A ₁ B ₁ C ₁ vs A ₂ B ₂ C ₁	76	39	132.01	163.46	20.393	16.854	8.81**
21.	A ₁ B ₂ C ₁ vs A ₂ B ₁ C ₁	39	47	145.26	135.21	19.118	19.612	2.399*
22.	A ₁ B ₂ C ₂ vs A ₂ B ₁ C ₂	43	54	152.40	147.33	19.591	16.206	1.37 (NS)
23.	A ₂ B ₁ C ₁ vs A ₂ B ₁ C ₂	47	54	135.21	147.33	19.612	16.206	3.36**
24.	A ₁ B ₁ C ₂ vs A ₂ B ₂ C ₁	51	39	142.00	163.46	15.960	16.854	6.13**
25.	A ₂ B ₁ C ₁ vs A ₂ B ₂ C ₂	47	51	135.21	157.14	19.612	20.948	5.17**
26.	A ₂ B ₁ C ₂ vs A ₂ B ₂ C ₁	54	39	147.33	163.46	16.206	16.854	4.002**
27.	A ₂ B ₁ C ₂ vs A ₂ B ₂ C ₂	54	51	147.33	157.14	16.206	20.948	2.34*
28.	A ₁ B ₁ C ₁ vs A ₁ B ₂ C ₁	76	39	132.01	145.26	20.393	19.118	3.44**

** Significant at 0.01 level
Significant

* Significant at 0.05 level

NS = Not

A₁ = Govt. & A₂ = Private;

B₁ = Govt. & B₂ = Private;

C₁ = Govt. & C₂ = Private

The result presented in Table-4 depicts that t-values for all the groups are found to be significant either at 0.05 level or at 0.01 level, except the groups such as A₂B₂C₁ vs A₂B₂C₂; A₁B₂C₁ vs A₂B₁C₂; A₁B₂C₂ vs A₂B₂C₂; A₁B₁C₂ vs A₁B₂C₁; A₁B₁C₁ vs A₂B₁C₁; A₁B₁C₂ vs A₂B₁C₂; A₁B₂C₁ vs A₁B₂C₂; A₁B₁C₂

vs $A_2B_1C_1$ and $A_1B_2C_2$ vs $A_2B_1C_2$ leading to the inference that these groups did not differ significantly with respect to self-regulated learning.

FINDINGS OF THE STUDY

- ❖ Main effect of type of school (A), locality (B) and gender (C) on self-regulated learning among 11th graders was found significant.
- ❖ Double interaction effect of locality & gender (B x C) had a significant effect on self-regulated learning among 11th graders. The interaction effect type of school & locality (A x B) and type of school & gender (A x C) was not found significant on self-regulated learning among 11th graders.
- ❖ Triple interaction effect of type of school, locality and gender (A x B x C) on self-regulated learning among 11th graders was found significant.

CONCLUSION

Review of literature makes it very clear that the concept of self-regulated learning among students has been ignored in India. Self-regulated learners observe and track different aspects of their performance which allow them to record information more accurately and gain awareness of their behavioural patterns and enhance their performance. They are able to evaluate their performance in relation to goal attainment. Self-regulation depends on motivation, time management, monitoring and control. If the learners do not have above said abilities, they learn by depending on the guidance and monitoring of others and fail to achieve a high level of learning. Therefore, both, the establishment of a theoretical framework of self-regulated learning and the development of relevant teaching strategies are beneficial in terms of promoting students' ability in self-learning. Motivational programmes and activities along with self-regulated learning instructional strategy should be integrated within the curriculum, which can promote self-regulated learning among students. In addition conferences, seminars and workshops should be organized regularly by government and relevant professional bodies to educate teachers on the use of self-regulated learning instructional strategies so that they may be able to develop this among students.

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