

Exploring Factors Influencing Self-Regulated Learning among Senior Secondary Female Students in the Dehradun District of Uttarakhand

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Abstract

Self-regulated learning (SRL) embodies a process in which individuals undertake behaviours and cognitive endeavours to manage and steer their own learning journey. This research delved into examining the influence of distinct variables, including monthly income, family size, and the educational backgrounds of both parents, on the dynamics of self-regulated learning. The study encompassed a cohort of 800 female students from the expanse of District Dehradun, Uttarakhand. Leveraging the self-regulated learning scale pioneered by Gupta and Mehtani (2017), the inquiry ascertained that the relationship between rural and urban residency, economic status, and self-regulated learning lacks significance. However, it emerged that family size and structure wield a notable influence on the self-regulated learning process.

Keywords: Self-regulated Learning, Female Students, Impact, Family Size, Family Income, Dehradun, India

INTRODUCTION

Self-regulated learning (SRL) is a process where individuals engage in behaviors and cognitive activities to control and direct their learning. SRL is a crucial factor in academic success, particularly in the context of female education. Research has shown that females tend to use SRL more frequently than males and that using SRL strategies can improve academic performance among female students (**Zimmerman & Schunk, 2011**).

A study by **Liu et al. (2020)** explored the effects of SRL on female high school students in China. The study found that SRL had a significant positive effect on academic achievement and self-efficacy among female students. Therefore, the authors suggested that using SRL

strategies may help enhance female students' academic self-efficacy, leading to better academic performance.

Another study by **Lee et al. (2017)** examined the relationship between SRL and academic achievement among female students in South Korea. The study found that SRL positively affected academic achievement among female students, and using SRL strategies was more effective for female students than male students. The authors suggested this may be due to differences in motivation and goal-setting between male and female students. Overall, research suggests that the use of SRL strategies can have a positive effect on female education. By empowering female students to take control of their learning, SRL can help improve academic performance and enhance academic self-efficacy. It may help to close the gender gap in education and promote greater gender equality.

Objectives of the study

1. To study the Self-Regulated Learning of female senior secondary students.
2. To study the impact of Monthly Income, Family Size, and Father's and Mother's Education of female senior secondary students on Self-Regulated Learning

The hypothesis of the study:

1. There is no significant difference between rural and urban female students concerning self-regulated learning and their respective dimensions.
2. No significant difference exists between nuclear and joint-family female students concerning self-regulated learning and their respective dimensions.
3. There is no significant difference between female students' BPL and APL economic status regarding self-regulated learning and their respective dimensions.
4. There is no significant influence of the mother's education of female senior secondary students on self-regulated learning and their respective dimensions.
5. There is no significant influence of the father's education of female senior secondary students on self-regulated learning and their respective dimensions.

MATERIAL AND METHODS:

Research Design

A normative survey research design was adopted to investigate the effect of self-regulating learning on female students.

Study Area

Dehradun is the state capital of Uttarakhand and is located in the northwestern section of the state, in the Himalayan foothills, at an elevation of around 2,200 feet (670 meters) (Brittanica, 2023). A total of four blocks of district Dehradun were selected for study, i.e., Chakrata, Doiwala, Sahaspur, and Raipur (Table 1, Fig. 1, and Fig. 2).

District	Block	Elevation (m)	Coordinates
Dehradun	Chakrata	2,118	30.7016° N, 77.8696° E
	Doiwala	485	30.1759° N, 78.1242° E
	Sahaspur	486	30.3927° N, 77.8096° E
	Raipur	483	30.3090° N, 78.0948° E

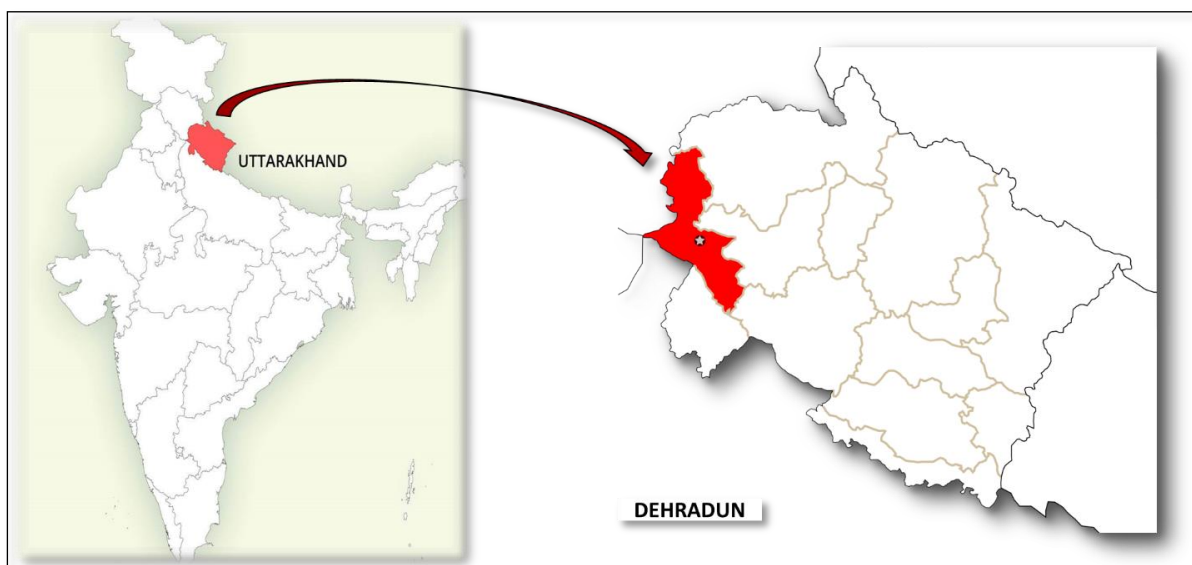


Fig. 1: Map of the Study Site Dehradun, Uttarakhand, India

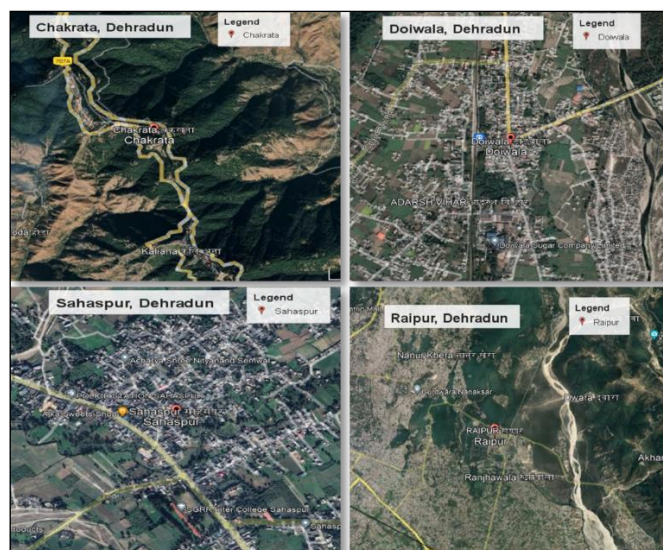


Fig. 2: Map of the selected four blocks of Dehradun (Chakrata, Doiwala, Sahaspur and Raipur)

Participants

Through stratified random selection, 800 female students were selected from the Dehradun district's four blocks (Chakrata, Doiwala, Sahaspur, and Raipur).

INSTRUMENT:

Self-Regulated Learning Scale by Gupta and Mehtani (2017)

The self-regulated learning scale by **Gupta and Mehtani (2017)** consists of 20 items that measure four dimensions of self-regulated learning: goal setting, self-monitoring, self-evaluation, and strategy use. The items are scored on a five-point Likert scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item from the scale is: "I set specific goals for myself when I study."

The scale was developed and validated through a series of studies involving undergraduate students in India. The authors used factor analysis to identify the four dimensions of SRL and confirmatory factor analysis to confirm the reliability and validity of the scale. They found that the scale had good internal consistency and test-retest reliability and was positively related to academic achievement and motivation. As a result, the self-regulated learning scale by **Gupta and Mehtani (2017)** provides a reliable and valid measure of self-regulated

learning used in various educational contexts. For example, teachers can use it to assess their students' ability to regulate their learning and to identify areas where students may need additional support. Researchers can also use it to investigate the relationship between self-regulated learning and other variables, such as academic achievement and motivation.

Statistical analysis: Mean, Standard deviation, and t-test performed

Results

The results of all the components of self-regulating learning among 800 female students in the Dehradun district are shown in **Table 1**. It can be seen from the table that the mean and standard deviation for self-awareness of 800 female school students was 31.37 and 4.161, respectively. In the case of planning and goal setting, the mean and standard deviation of female school students was 22.93 and 3.438, respectively. The mean and standard deviation values for self-motivation was 25.97 and 3.429, respectively. In the case of self-control, the values of the mean and standard deviation were 30.38 and 3.077, respectively. The mean and standard deviation values for self-evaluation were found to be 34.67 and 4.882, respectively. While in self-modification, the values of the mean and standard deviation were found to be 32.08 and 4.878, respectively. In the case of overall self-regulated learning, the mean and standard deviation were found to be 177.42 and 19.872, respectively.

Table 1: Different Dimensions of Self-Regulated Learning among higher secondary female students

Self-Regulated Learning	N	Mean	Std. Deviation	Skewness	Kurtosis
Self- Awareness (SA)	800	31.37	4.161	-.128	-.411
Planning and Goal Setting (PGS)	800	22.93	3.438	.000	-.288
Self- Motivation (SM)	800	25.97	3.429	.882	2.676
Self- Control (SC)	800	30.38	3.077	-.344	.494
Self- Evaluation (SE)	800	34.67	4.882	-.148	.124

Self- Modification (SM1)	800	32.08	4.878	-.331	-.440
Self- Regulated Learning (SEL)	800	177.42	19.872	-.186	-.257

Skewness is a measure of symmetry, and kurtosis is a measure of whether the data are heavy-tailed or light-tailed relative to a normal distribution. That is, data sets with high kurtosis tend to have heavy tails or outliers since achieving a normal distribution is impossible. A simple thumb rule is applied in the social sciences: if you divide either score by its standard error and the result is significant, it suggests that the data is not normal concerning that statistic (George & Mallery, 2010). The skewness value for self-awareness, planning, goal-setting, self-motivation, self-control, self-evaluation, self-modification, and total self-regulated learning was -.128, .000, .882, -.344, -.148, -.331 and -.186, and the value of kurtosis for self-awareness, planning, goal-setting, self-motivation, self-control, self-evaluation, and total self-regulated learning was -.411, -.288, 2.676, .494, .124, -.440, and -.257. For all the dimensions of educational barriers, they were found to be insignificant, which means that both of these values are within the accepted range.

Impact of residential area and Surroundings on self-regulated learning of higher secondary female students:

In the present study, a total of 800 female students were surveyed; among them, 321 belonged to rural areas, while 479 were from urban areas. The survey results of the present study have reported no significant difference between rural and urban female students concerning self-regulated learning and their respective dimensions. **Table 2.**

Table 2: Effect of Urban and rural residence on Self-regulated Learning of surveyed students

	Locality	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Self- Awareness (SA)	Rural	321	31.28	3.625	-.537	798	.592
	Urban	479	31.44	4.487			

Planning and Goal Setting (PGS)	Rural	321	22.70	3.427	-1.548	798	.122
	Urban	479	23.09	3.441			
Self- Motivation (SM)	Rural	321	25.97	3.337	-.046	798	.964
	Urban	479	25.98	3.494			
Self- Control (SC)	Rural	321	30.40	2.836	.103	798	.918
	Urban	479	30.38	3.231			
Self- Evaluation (SE)	Rural	321	34.42	4.730	-1.163	798	.245
	Urban	479	34.83	4.980			
Self- Modification (SM1)	Rural	321	31.88	4.622	-.945	798	.345
	Urban	479	32.22	5.043			
Self- Regulated Learning (SEL)	Rural	321	176.65	18.242	-.889	798	.374
	Urban	479	177.93	20.897			

Table. 2. Compares rural and urban female school students' self-regulated learning. It is clear from the table that the mean and standard deviation for self-awareness of rural female students were 31.28 and 3.625, respectively, and the mean and standard deviation for urban female school students were 31.44 and 4.487, respectively. The value of the t-test was found to be .537, which was insignificant. In the case of planning and goal setting, the mean and standard deviation of rural female students were 22.70 and 3.427, and the mean and standard deviation of urban female students were 23.09 and 3.441. The value of the t-test was found to be 1.548, which was insignificant. The mean and standard deviation for self-motivation of rural female school students were 25.97 and 3.337, and the mean and standard deviation of urban female students were 25.98 and 3.494. The value of the t-test was 0.46, which was insignificant. In the case of self-control, the mean and standard deviation of rural female students were 30.40 and 2.836, and the mean and standard deviation of urban female students

were 30.38 and 3.231. The value of the t-test was found to be .103, which was insignificant. The mean and standard deviation for self-evaluation of rural female school students were 34.42 and 4.730, and the mean and standard deviation of urban female students were 34.83 and 4.980. The value of the t-test was 1.163, which was insignificant. The mean and standard deviation for self-modification of rural female school students were 31.88 and 4.622, and the mean and standard deviation of urban female students were 32.22 and 5.043. The t-test value was discovered to be .945, which was insignificant. The mean and standard deviation for overall self-regulated learning of rural female school students were 176.65 and 18.242, and the mean and standard deviation of urban female students were 177.93 and 20.897. The t-test value was observed to be .889, which was insignificant.

Thus, based on the results, the null hypothesis "There is no significant difference between the rural female students and urban female students for their self-regulated learning and their respective dimensions" is accepted, and it can be said that rural and urban female school students do not differ in their self-regulated learning.

Impact of Nuclear and joint families on self-regulated learning of female higher secondary female students:

The present study was also an effort to assess or report the potential difference in self-regulated learning among female students. However, the statistical analysis revealed no significant difference between nuclear and joint-family female students regarding self-regulated learning and their respective dimensions. **Table 3.**

Table 3: Effect of Nuclear and joint families on self-regulated learning of surveyed students

	Family Structure	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Self- Awareness (SA)	Nuclear	454	31.60	4.298	1.757	798	.079
	Joint	346	31.08	3.960			
Planning and Goal Setting (PGS)	Nuclear	454	23.22	3.243	2.669	798	.008
	Joint	346	22.56	3.650			

Self- Motivation (SM)	Nuclear	454	26.51	3.571	5.125	798	.000
	Joint	346	25.27	3.102			
Self- Control (SC)	Nuclear	454	30.75	3.121	3.841	798	.000
	Joint	346	29.91	2.956			
Self- Evaluation (SE)	Nuclear	454	34.94	4.403	1.806	798	.071
	Joint	346	34.31	5.433			
Self- Modification (SM1)	Nuclear	454	32.11	4.877	.175	798	.861
	Joint	346	32.05	4.887			
Self- Regulated Learning (SEL)	Nuclear	454	179.12	19.939	2.786	798	.005
	Joint	346	175.18	19.590			

Table 3 compares female school students' nuclear and joint family structures for self-regulated learning. It is clear from the table that the mean and standard deviation for self-awareness of nuclear family structure among female students were 31.60 and 4.298, respectively, and the mean and standard deviation for joint family structure among female school students were 31.08 and 3.960, respectively. The value of the t-test was found to be 1.757, which was insignificant. In the case of planning and goal setting, the mean and standard deviation of the nuclear family structure of female students were 23.22 and 3.243, respectively, and the mean and standard deviation of the joint family structure of female school students were 22.56 and 3.650. The value of the t-test was found to be 2.669, which was significant at the 0.05 level of significance. The mean and standard deviation for self-motivation in the nuclear family structure of female students were 26.51 and 3.571, respectively, and the mean and standard deviation for the joint family structure of female school students were 25.27 and 3.102. The value of the t-test was 5.125, which was significant at the .01 level of significance. In the case of self-control, the mean and standard deviation of the nuclear family structure of female students were 30.75 and 3.121, respectively, and the mean and standard deviation of the joint family structure of female school students were 29.91 and 2.956. The value of the t-test was found to be 3.841, which

was significant at the .01 level of significance. The mean and standard deviation for self-evaluation of nuclear family structure in female students were 34.94 and 4.403, respectively, and the mean and standard deviation for joint family structure in female school students were 34.31 and 5.433. The value of the t-test was 1.806, which was insignificant. The mean and standard deviation for self-modification of the nuclear family structure of female students were 32.11 and 4.877, respectively, and the mean and standard deviation for the joint family structure of female school students were 32.05 and 4.887. The value of the t-test was .175, which was insignificant. The mean and standard deviation for overall self-regulated learning in the nuclear family structure of female students were 179.12 and 19.939, respectively, and the mean and standard deviation for the joint family structure of female school students were 175.18 and 19.590. The value of the t-test was 2.786, which was significant at the .01 level of significance.

Thus, based on the results, the null hypothesis "There is no significant difference between the nuclear family structure and joint family structure female students for their self-regulated learning and their respective dimensions," is rejected, and it can be said that family structure creates a difference for the self-regulated learning of female school students. The family structure of female school students creates a difference in planning and goal setting, self-motivation, self-control, and overall self-regulated learning. Furthermore, the mean of the nuclear family structure of female students is significantly higher than the joint family structure of female students for the dimensions mentioned earlier.

Impact of BPL (below poverty line) and APL (above poverty line) economic status on self-regulated learning of higher secondary female students:

The formulated hypothesis, "There is no significant difference between BPL and APL economic status female students with self-regulated learning and their respective dimensions," was also tested and analyzed during the present study. In total, 363 female students belonged to the BPL category, while 437 were from the APL category.

Table 4: Effect of Economic Status on self-regulated learning of surveyed students

	Economic Status	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Self- Awareness (SA)	BPL	363	31.42	4.080	.313	798	.755

	APL	437	31.33	4.230			
Planning and Goal Setting (PGS)	BPL	363	22.75	3.406	-1.342	798	.180
	APL	437	23.08	3.462			
Self- Motivation (SM)	BPL	363	25.18	2.941	-6.075	798	.000
	APL	437	26.63	3.663			
Self- Control (SC)	BPL	363	30.02	2.985	-3.057	798	.002
	APL	437	30.69	3.122			
Self- Evaluation (SE)	BPL	363	35.09	5.397	2.220	798	.027
	APL	437	34.32	4.385			
Self- Modification (SM1)	BPL	363	32.33	4.982	1.305	798	.192
	APL	437	31.88	4.786			
Self- Regulated Learning (SEL)	BPL	363	176.80	19.458	-.799	798	.425
	APL	437	177.93	20.218			

Table 4 Compares the BPL and APL economic status of female school students for self-regulated learning. It is clear from the table that the mean and standard deviation for self-awareness of BPL economic status of female students were 31.42 and 4.080, respectively, and the mean and standard deviation for APL economic status of female school students were 31.33 and 4.230, respectively. The value of the t-test was found to be 1.330, which was insignificant. In the case of planning and goal setting, the mean and standard deviation of BPL economic status of female students were 22.75 and 3.406, respectively, and the mean and standard deviation of APL economic status of female school students were 23.08 and 3.462, respectively. The value of the t-test was found to be 1.342, which was insignificant. The mean and standard deviation values for self-motivation and BPL economic status of female students were 25.18 and 2.941, respectively, and the values of the mean and standard deviation for APL economic status of female school students were 26.63 and 3.663,

respectively. The value of the t-test was 6.075, which was significant at the .01 level of significance. In the case of self-control, the mean and standard deviation of the BPL economic status of female students were 30.02 and 2.985, respectively, and the mean and standard deviation of the APL economic status of female school students were 30.69 and 3.122, respectively. The value of the t-test was found to be 3.057, which was significant at the 0.01 level of significance. The mean and standard deviation for self-evaluation of BPL economic status of female students were 35.09 and 5.397, respectively, and the mean and standard deviation for APL economic status of female school students were 34.32 and 4.385, respectively. The value of the t-test was 2.220, which was significant at the 0.05 level of significance. The mean and standard deviation for self-reported BPL economic status of female students were 32.33 and 4.982, respectively, and the mean and standard deviation for APL economic status of female school students were 31.88 and 4.786, respectively. The value of the t-test was 1.305, which was insignificant. The mean and standard deviation for overall self-regulated learning of BPL economic status of female students were 176.80 and 19.458, respectively, and the mean and standard deviation for APL economic status of female school students were 177.93 and 20.218, respectively. The value of the t-test was found to be .799, which was insignificant.

Thus, based on the results presented in **Table 4**, the null hypothesis "There is no significant difference between the BPL and APL economic status of female students in relation to self-regulated learning and their respective dimensions," is accepted, and it can be said that the economic status of female school students in their self-regulated learning but not in the case of self-motivation, self-control, and self-evaluation creates a difference between BPL and APL economic status. The mean APL economic status of female school students is significantly higher than the mean BPL economic status for the above variables. In the case of self-evaluation, the mean BPL economic status of female school students is significantly higher than APL economic status.

Impact of Mother's and Father's Education on Self-Regulated Learning of Higher Secondary Female Students:

In the present study, the educational qualifications of both parents, i.e., the mother's and father's, were considered. Therefore, both hypotheses, "There is no significant influence of mother's education of female senior secondary students on self-regulated learning and their respective dimensions" (Fig. 3) and "There is no significant influence of father's education of

female senior secondary students on self-regulated learning and their respective dimensions" (Fig. 4) were accepted as per the results of the present study.

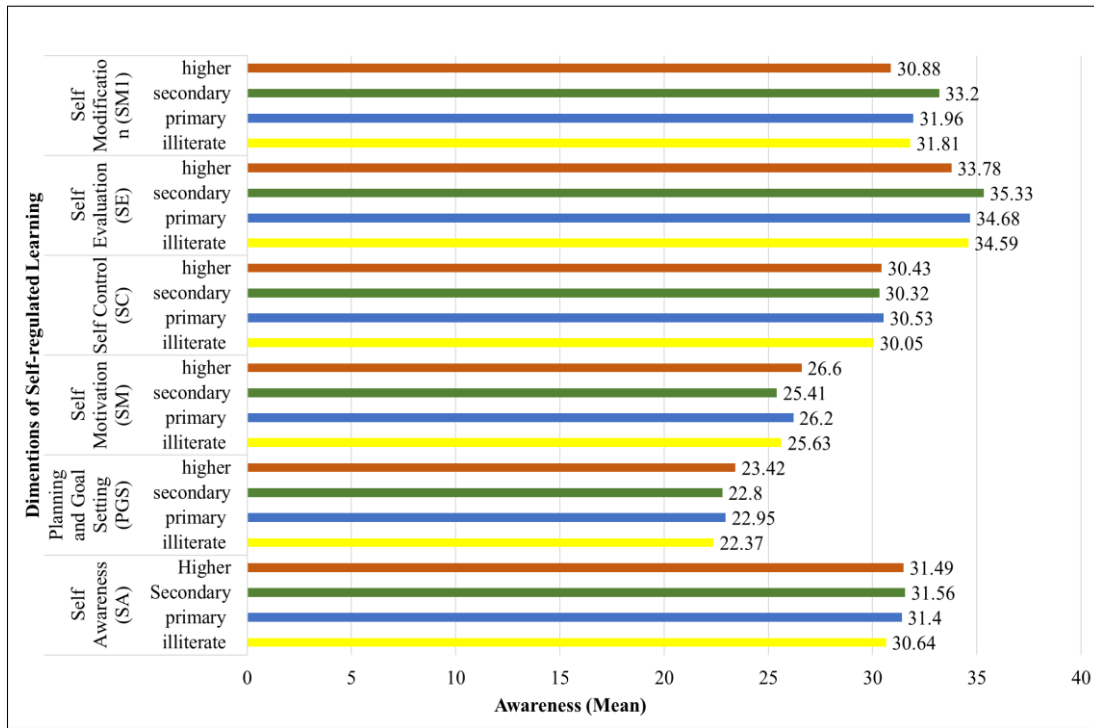


Fig.3: Impact of Mother's Education on Self-regulated Learning of Females of Higher Secondary Education

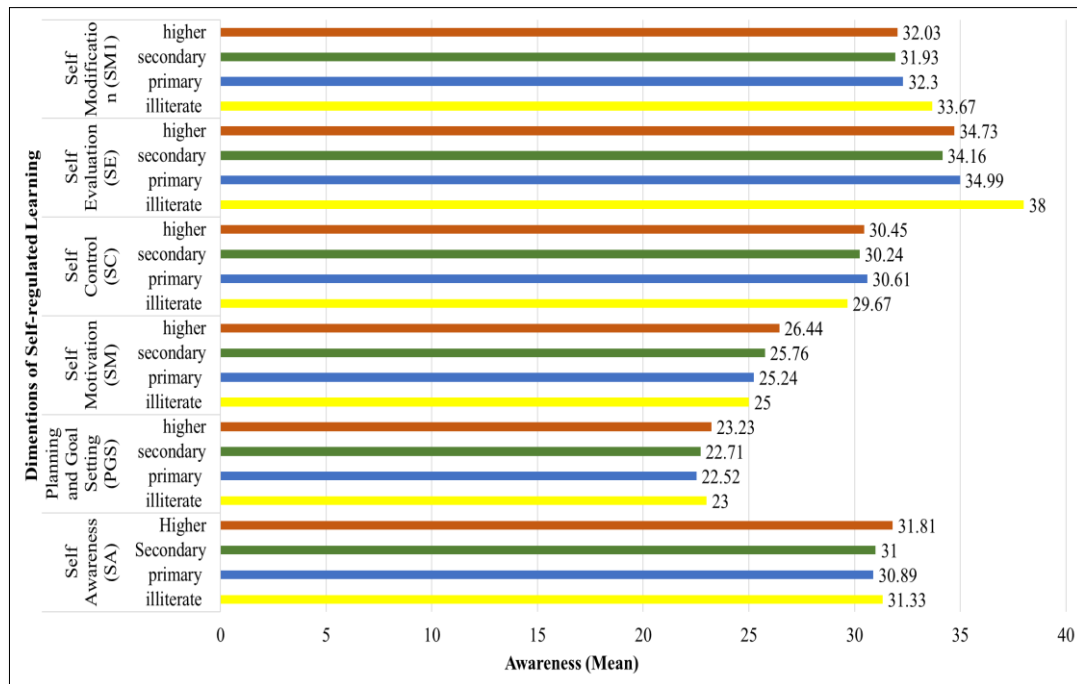


Fig.4: Impact of Father's Education on Self-regulated Learning of Females of Higher Secondary Education

Discussion and Conclusion

The phenomenon of self-regulated learning is noticed by countries that perform well on international assessments, like the PISA (Program for International Student Assessment) (IES, 2012). The benefits of self-regulated learning have been studied worldwide (Lopez-Garrido, 2023). Research has shown significant differences in SRL between rural and urban students. For example, a study by Zhao et al. (2010) found that rural students were less likely to engage in self-regulated learning behaviors than urban students. This may be due to several factors, including less access to educational resources and less exposure to technology in rural areas. Additionally, students in rural areas may have fewer opportunities to engage in social and cultural activities that could help them develop self-regulated learning skills.

However, other studies have found that rural students may have an advantage regarding SRL. For example, a study by Linnenbrink-Garcia et al. (2016) found that rural students reported higher levels of motivation and engagement in their schoolwork than urban students. This may be partly because rural students have more opportunities to engage in extracurricular activities and community service projects, which can help develop self-regulated learning skills.

The surrounding environment can also have an impact on SRL. For example, students in poverty or high-crime areas may face additional challenges that can impact their ability to engage in self-regulated learning behaviors. For example, a study by Karabenick and Noda (2004) found that students who lived in high-crime areas were less likely to engage in self-regulated learning behaviors than those in low-crime areas.

In conclusion, the impact of rural and urban residences and surroundings on the SRL of school students is a complex issue that requires careful consideration. While there are some differences in SRL between rural and urban students, these differences can be mitigated by factors such as access to resources and opportunities for engagement. Similarly, the surrounding environment can impact SRL, but it is essential to recognize that students in challenging environments may also have unique strengths and resources that can be leveraged to support their learning. However, in the present study, no significant difference was found between the rural and urban female students for their self-regulated learning and their respective dimensions.

The results of the current study also disprove the null hypothesis, "There is no significant difference between the nuclear family structure and joint family structure for female students' self-regulated learning and their respective dimensions," and it can be concluded that family structure affects how well female school students can regulate their learning. Female students' familial situations impact their planning and goal-setting, motivation and self-control, and self-regulated learning. For the dimensions mentioned earlier, the mean of the nuclear family structure of female students is significantly greater than the joint family structure of female students. These results are dissimilar to the results of **Bhatt and Bahadur, 2020**, as they found no difference between the self-efficacy and achievement motivation scores of the students from nuclear and joint families.

In the present study, it has been found that there is no significant difference between BPL and APL economic status of female students in self-regulated learning, and their respective dimensions were also tested and analyzed during the present study. Therefore, this hypothesis has been accepted as per the results of the present study. These results contrast with previous studies by **Tahir et al. (2021)** and **Xiao & Song (2022)**, where they found a significant correlation between parents' economic status and their self-regulated learning and academic achievement.

Parental participation in education refers to parental actions that support their children's education. It has been found that parents may significantly impact their children's education even when they are not directly involved in the classroom (**Ratelle & Duchesne, 2017; Saa'da, N. 2021**). It has been seen in previous research that parental education and literacy play a significant role in their children's self-regulated learning in higher education (**Kaur and Kaur, 2019**), while in the present study, no significant influence of the mother's and father's education of female senior secondary students on self-regulated learning and their respective dimensions has been found. This could be due to the changed mindset of Indian parents to let their children complete their school education, and their respective education does not affect this mindset.

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