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Metacognitive skills of secondary school students in relation to their academic resilience

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Abstract

The research focused on examining how secondary school students' metacognitive skills relate to their academic resilience. A random sample of 1200 Xth grade students from government high/senior secondary schools in Jind, Hisar, Kaithal, and Fatehabad districts in Haryana was selected using multistage cluster sampling. The study utilized Gupta and Suman's (2017) Metacognitive Skills Scale and Mallick and Kaur's (2018) Academic Resilience Scale. The analysis, which involved percentage statistics and a t-test, showed that the majority of students (40.75%) had average metacognitive skills, while 41.75% displayed average academic resilience. Furthermore, there was no significant difference in metacognitive skills and academic resilience based on gender and locale. These findings hold significant implications for educators, highlighting the need to integrate metacognitive skill development approaches into teaching methodologies. Educators should be equipped with strategies to foster students' self-regulation, critical thinking, and problem-solving abilities, thereby strengthening their academic resilience.

Keywords: Metacognitive skills, Academic resilience, Secondary students, Gender, Locality

Introduction

In the field of education, metacognition the ability to think about one's own thinking plays a vital role in shaping students' learning processes and outcomes. Metacognitive skills, such as planning, monitoring, and evaluating one's learning, enable students to adapt their strategies to achieve academic success. These skills are particularly important for secondary school students, who often face challenges related to increased academic demands, social pressures, and the need to navigate a rapidly changing world. Academic resilience, defined as a student's ability to effectively deal with setbacks, stress, and challenges in their educational journey, is another critical factor influencing academic performance. Resilient students are better equipped to overcome obstacles and maintain their motivation, even in adverse circumstances. The relationship between metacognitive skills and academic resilience is of growing interest in educational research, as both attributes contribute to students' capacity to succeed in demanding academic environments. Exploring the interplay between these two factors is essential for understanding how students can develop both the cognitive and emotional tools needed to excel academically. By fostering metacognitive awareness and resilience, educators can empower students to become self-regulated learners who are capable of managing their learning and adapting to challenges. This study seeks to investigate the metacognitive skills of secondary school students and their relationship to academic resilience, providing insights that may inform teaching approaches and interventions to improve student achievement.

Literature Review

The cognitive processes that require an individual to be aware of and have the ability to govern their own thinking as well as their own learning are referred to as "meta-cognitive skills," and the phrase "meta-cognitive skills" is used to describe these processes (Bright, 2018). Cognition regulation encompasses the capacity to plan, monitor, adjust, and assess one's own learning process (Gupta & Suman, 2016). Meta cognitive skills are especially significant in education, referring to a person's ability to recognize and understand their own thought processes, often termed as thinking about one's thinking (Flavell, 1976). Students who have strong meta-cognitive abilities are in a better position to set goals for themselves, track their own progress, and adapt their learning strategies to suit a wide variety of various activities and challenges. Drucker (2008), defines understanding one's own strengths enables students to persist through academic challenges and gain a deeper understanding of their studies, fostering self-directed learning. Exploring the link between meta-cognitive skills and academic resilience is essential for devising effective interventions to enhance students' coping strategies and academic achievements.

In education, meta-cognitive skills gives students become more effective and independent learners by providing them with the tools necessary to organize, monitor, and evaluate their own learning processes (Arthor et.al, 2014). This is accomplished students become more independent learners. The accumulation of a variety of unique components is necessary for the development of meta-cognitive abilities (Simpson, 2001). These components include meta-cognitive knowledge, meta-cognitive control, and meta-cognitive experiences. Students are believed to experience greater satisfaction and achieve higher academic performance when they adopt a mastery-oriented approach or are driven by intrinsic motivation. According to Wang and Gordon (1994), the concept of "academic resilience" refers to the increased likelihood of succeeding in school despite facing environmental challenges shaped by early experiences, traits, and conditions. Academic resilience enables students to attain positive educational outcomes even in adverse circumstances. For schools, fostering this resilience requires comprehensive planning and collaboration among the entire school community to support vulnerable students in exceeding expectations set by their circumstances. Both teachers and parents play a crucial role in nurturing this resilience by providing necessary support to students facing academic challenges (McGrath, Venkataraman, & Macmillan, 1994). Academic resilience is intricately linked to the support network provided by parents and teachers, the collaborative environment within schools, the cultivation of a positive school climate, and the fostering of a growth-oriented mindset among students (Stewart et al., 2012; Claro, Paunesku, & Dweck, 2016; Haimovitz & Dweck, 2017). A good school atmosphere is important for students to do well and helps predict how they'll feel and behave. Studies have found that when schools have a positive environment, students are more likely to succeed and have better emotional health. On the other hand, if the atmosphere is negative, it can lead to more behavior issues.

Roeser, Eccles, and Sameroff (2000); Loukas and Robinson (2004); Aldridge et al. (2015). Pupils with a growth mentality are more likely to approach difficult assignments with tenacity and fortitude. They think that with constant practice and effort, they can get better (Hong et al., 1999; Nussbaum & Dweck, 2008; Blackwell, Trzesniewski, & Dweck, 2007; Yeager, Trzesniewski, & Dweck, 2012). Furthermore, academic resilience nurtures indispensable for success in India. Through the process of overcoming challenges, individuals develop critical skills such as problem-solving, emotional regulation, and effective communication. These skills not only enhance resilience but equip individuals with navigate complex situations in diverse contexts (Sterling, 2010).

Need and Significance

Understanding the metacognitive skills of secondary school students is essential as it sheds light on how they perceive, regulate, and understand their own learning processes. Metacognition encompasses the awareness and control individuals have over their thinking, which directly influences their academic performance. By delving into these skills, educators and researchers can identify strengths and areas for improvement in students' learning strategies. This knowledge is crucial for designing tailored interventions and educational programs that foster deeper learning and improved academic outcomes. The significance of studying metacognitive skills in relation to academic resilience lies in its potential to empower students with the tools needed to navigate challenges effectively. Academic resilience refers to the ability to persevere and succeed academically despite facing obstacles or setbacks. They become better equipped to handle academic pressures, manage stress, and persist in their academic pursuits. This not only enhances their individual academic performance but also contributes to a positive learning environment and overall student well-being. Thus, investigating the link between metacognition and academic resilience is crucial for promoting student success and holistic development.

Objectives of the study

The current study aims to achieve the following:

1) To investigate the metacognitive proficiency of secondary government school pupils by location and gender.
2) To investigate the degree of academic resilience among students in government secondary schools by location and gender.
3) To assess how government secondary school pupils' metacognitive abilities relate to their academic resilience.
4) To compare government secondary school students' academic resilience by location and gender.
5) To examine how government secondary school students' academic resilience and metacognitive abilities relate to one another.

Study Hypotheses

1) There is no significant difference in the meta-cognitive skills of male and female government secondary school students.
2) There is no significant difference in the meta-cognitive skills of government secondary school students belonging to the urban and rural areas.
3) There is no significant difference in the academic resilience of male and female government secondary school students.
4) There is no significant difference in the academic resilience of government secondary school students belonging to the urban and rural areas.
5) There is no significant difference in the meta-cognitive skills of government secondary school students having high and low academic resilience.
6) There is no significant difference in the academic resilience of male and female government secondary school students.
7) There is no significant difference in the academic resilience of government secondary school students belonging to the urban and rural areas.
8) There is no significant relationship between meta-cognitive skills and academic resilience of government secondary school students.

Sample: 1,200 government matriculation students from the Haryana state districts of Jind, Hisar, Kaithal, and Fatehabad were chosen at random for the study.

Instrument Used:

1) Meta Cognitive Skills Scale by Gupta and Suman (2017).

2) Academic Resilience Scale by Mallick and Kaur (2018).

Methods:

This study was carried out using a descriptive study framework and the survey method. The institution's officials were asked for permission to collect data from its students. The teens were assured that their information would only be used for research before the questionnaire was distributed.

Data Analysis and Interpretation

The metacognitive skills and academic resilience levels of 1,200 students were categorized into various levels: Very High, High, Above Average, Average, Below Average, Low, and Very Low. Percentage statistics were used to analyze the data. The results obtained from all 1,200 students are displayed in Tables 1 and 2.

Table 1: Percentage of secondary students on different levels of metacognitive skills (N=1200)

Sr. No	Level of Metacognitive Skills	No. of Students	Percentage of students
1.	Very High	101	8.42%
2.	High	172	14.33%
3.	Above Average	226	18.83%
4.	Average	489	40.75%
5.	Below Average	145	12.08%
6.	Low	54	4.5%
7.	Very Low	13	1.09%
Total		**1200**	**100%**

Table no. 1 shows us the percentage distribution of secondary school students on different levels of metacognitive skills. Highest percentage of students (40.75%) has average level of metacognitive skills followed by above average level (18.83%). 14.33% of students have high level of metacognitive skills followed by below average (12.08%). 8.42% of students have very high level of metacognitive skills followed by low (4.5%). The metacognitive skills of 1.09% of students are extremely low. The majority of secondary pupils have Ordinary Metacognitive Skills (40.75%), Between Average Metacognitive Skills (18.83%), and Very Low Metacognitive abilities Skills (1.09%) respectively, according to the table.

Table 2: Percentage of secondary students on different levels of academic resilience (N=1200)

Sr. No	Level of Academic Resilience	No. of Students	Percentage of students
1.	Very High	71	5.92%
2.	High	102	8.5%
3.	Above Average	342	28.5%
4.	Average	501	41.75%
5.	Below Average	105	8.75%
6.	Low	61	5.08%
7.	Very Low	18	1.5%
Total		**1200**	**100%**

Table 2 presents the distribution of secondary school students across different levels of academic resilience. The largest group, accounting for 41.75% of students, exhibits an average level of academic resilience, followed by 28.5% with an above-average level. A smaller proportion, 8.75%, falls into the below-average category, and 8.5% of students show a high level of resilience. Only 5.92% demonstrate a very high level of resilience, while 5.08% have a low level. The smallest group, at 1.5%, falls into the very low category. Overall, the data reveals that most students display either average

or above-average academic resilience, with only a tiny percentage showing very low resilience.

Hypothesis 1: - There is no significant difference in the metacognitive skills of government secondary school students with respect to gender.

Table 3: Mean, Standard Deviation and t-value of Male and Female Secondary Students

Gender	Sample Size	Mean	Standard Deviation	t-value
Male	664	142.14	18.17	**0.112***
Female	536	134.38	17.01	

(*not significant at 0.01 level of significance)

According to Table 3 above, the average score for men is 142.14 with an 18.17 standard deviation, and the average score for women is 134.38 with a 17.01 standard deviation. Male-female differences in metacognitive abilities have a computed t-value of 0.112, which is below the threshold values at the 0.01 and 0.05 degree of freedom levels. In light of this, we adopt the null hypothesis and come to the conclusion that male and female students in secondary educational institutions do not significantly differ in their metacognitive abilities.

Hypothesis 2: - There is no significant difference in the metacognitive skills of government secondary school students with respect to locale.

Table 4: Mean, Standard Deviation and t-value of Rural and Urban Secondary Students

Locality	Sample Size	Mean	Standard Deviation	t-value
Rural	720	151.57	21.12	**0.122***
Urban	480	131.11	16.57	

(*not significant at 0.01 level of significance)

The average score for students in rural areas is 151.57 with a standard deviation of 21.12, while the average score for students in urban areas is 131.11 with a standard deviation of 16.57, as indicated in Table 4 above. At both the 0.01 and 0.05 confidence levels, the t-value for a difference in metacognitive abilities between pupils in rural and urban areas is 0.122, which is less than the critical values. We therefore accept the null hypothesis and come to the conclusion that pupils in government-run secondary schools in rural and urban areas do not significantly differ in their metacognitive abilities. Since both urban and countryside pupils have comparable levels of metacognitive capabilities, it may be concluded that location has no effect on secondary school students' metacognitive abilities.

Hypothesis 3: - There is no significant difference in the academic resilience of male and female government secondary school students.

Table 5: Mean, Standard Deviation and t-value of Male and Female Secondary Students

Gender	Sample Size	Mean	Standard Deviation	t-value
Male	664	121.14	11.17	**0.012***
Female	536	94.18	9.01	

(*not significant at 0.01 level of significance)

According to Table 5, the average score for men is 121.14 with an 11.17 standard deviation, and the average score for women is 94.18 with a 9.01 standard deviation. At the respective 0.01 and 0.05 significance thresholds, the t-value for the resilience to learning between boys and girls is 0.012, below the crucial limits. As a result, we agree with the null hypothesis and conclude that male and female students in secondary educational institutions do not significantly differ in their academic resilience.

Hypothesis 4: Students attending government secondary schools do not significantly differ in their academic resilience based on their location.

Table 6: Mean, Standard Deviation and t-value of Rural and Urban Secondary Students

Locality	Sample Size	Mean	Standard Deviation	t-value
Rural	720	113.43	14.34	**0.149***
Urban	480	91.21	6.41	

(*not significant at 0.01 level of significance)

According to Table 6 above, students in rural areas score on average 113.43 with a standard deviation of 14.34, whereas students in urban areas score on average 91.21 with a standard deviation of 6.41. At both the 0.01 and 0.05 significance thresholds, the t-value for academic resilience between urban and rural students is 0.149, below the crucial limits. Thus, we accept the null hypothesis and come to the conclusion that students in government-funded secondary schools in rural and urban areas do not significantly differ in their academic resilience. Given that both rural and urban students exhibit comparable levels of academic resilience, it appears that location has little bearing on secondary school students' resilience.

Hypothesis 5:- There is no significant difference in the meta-cognitive skills of government secondary school students having high and low academic resilience.

Table 7: Comparison of Meta-Cognitive Skills of Secondary School Students having high and low Academic Resilience

Meta-Cognitive Skills Dimensions	Academic Resilience	N	Mean	SD	df	t-value	p-value	Null Hypo.
Planning skill	High	102	36.20	7.98	241	6.21	p<0.05	Rejected
	Low	141	29.22	8.60				
Implementation Skill	High	102	34.12	5.72	241	1.64	p>0.05	Accepted
	Low	141	26.27	7.81				
Monitoring Skill	High	102	35.55	6.91	241	3.86	p<0.05	Rejected
	Low	141	25.50	8.02				
Evaluation Skill	High	102	30.33	6.93	241	9.26	p<0.05	Rejected
	Low	141	29.15	7.33				

Table 7 shows that the 't-value' for the metacognitive skill dimension of Implementation Skill is 1.64, which is not significant at the 0.05 level. This indicates that there is no significant difference in the metacognitive skills related to Implementation Skill between students with high and low academic resilience. Therefore, the null hypothesis, stating that "There is no significant difference in the metacognitive skills of government secondary school students with high and low academic resilience," is accepted for this particular metacognitive dimension.

Table 7 further shows that the 't-values' for the Planning Skill, Monitoring Skill, and Evaluation Skill are 6.21, 3.86, and 9.26, respectively, which are significant at the 0.05 level. This indicates that there is a significant difference in the metacognitive skills related to Planning, Monitoring, and Evaluation between students with high and low academic resilience. Therefore, the null hypothesis, stating that "There is no significant difference in the metacognitive skills of government secondary school students with high and low academic resilience," is rejected for these metacognitive dimensions.

Hypothesis 6: - There is no significant difference in the academic resilience of male and female government secondary school students.

Table 8: Comparison of Academic Resilience of Male and Female Secondary School Students

Dependent variable	Gender	N	Mean	SD	df	t-value	p-value	Null Hypothesis
Academic Resilience	Male	664	118.87	25.89	1198	5.14	p<.05	Rejected
	Female	536	112.48	22.39				

According to the information in Table 8, the average academic resilience scores for secondary school students who are male and female are 118.87 and 122.48, respectively. Furthermore, Table 4.21 shows that there is a significant difference (t-value) of 5.14 between the standard deviation scores of male and female students at the 0.05 level. Consequently, "There is no substantial disparity in the resilience to academic hardship of male and female intermediate students," which is the null hypothesis, is disproved.

Hypothesis 7:- There is no significant difference in the academic resilience of government secondary school students belonging to the urban and rural areas.

Table 9: Comparison of Academic Resilience of Urban and Rural Secondary School Students

Dependent Variable	Locality	N	Mean	SD	df	t-value	p-value	Null Hypothesis
Academic Resilience	Rural	720	120.29	28.51	1198	4.91	p<.05	Rejected
	Urban	480	109.52	15.02				

The data from table 9 show that rural secondary students have a mean academic resilience score of 120.29, while urban students have a mean of 109.52. The t-value calculated in Table 4.22 is 4.91, which is significant at the 0.05 level. As a result, the null hypothesis, which states that there is no significant difference in academic resilience between rural and urban secondary students, is rejected.

Hypothesis 8: - There is no significant relationship between meta-cognitive skills and academic resilience of government secondary school students.

Table 10: Relationship between Meta-Cognitive Skills of Sec. Students and Various Dimensions of Academic Resilience

Variables		N	Correlation (r)	p-value	Null Hypothesis
Meta-Cognitive Skills	Academic Confidence	1200	.052	p>0.05	Accepted
	Sense of Well-Being	1200	.061	p>0.05	Accepted
	Motivation & Ability to get Goals	1200	.104	p<0.05	Rejected
	Relationship with Peers & Adults	1200	.145	p<0.05	Rejected
	Emotional Regulation & Physical Health	1200	.219	p<0.05	Rejected

The calculated r values among metacognitive skills and the categories of Emotional Regulation & Physical Health, Relationship with Peers & Adults, and Motivation & Ability to Achieve Goals are 0.104, 0.145, and 0.219, respectively, according to Table 10's results. These values are significant at the 0.05

level. This suggests a strong correlation between these elements of academic resilience and the metacognitive abilities of secondary school pupils attending government schools. Thus, "There is not a significant connection among metacognitive skills and resilience to education among government-sponsored secondary school students," which is the null hypothesis, is disproved. Additionally, there is a positive correlation between these students' metacognitive abilities and their incentive and capacity to achieve goals, relationships with peers and adults, and emotional regulation and physical health.

Table 10 further reveals that the calculated r-values across metacognitive skills and each dimension of Sense of Well-Being and Academic Confidence are 0.061 and 0.052, respectively, and are not remarkable at the 0.05 level. This suggests that the academic resilience components of academic trust and perception of well-being do not significantly correlate with the metacognitive abilities of secondary school pupils attending government schools. Thus, "There is no substantial connection between metacognitive skills and resilience to change in these dimensions," which is the null hypothesis, is accepted.

Discussion of Results

The study found that from a gender point of view, the majority of meta-cognitive skills dimension, planning skill of secondary male and female students possess average level of meta-cognitive skills. Meta-Cognitive Skills second dimension of implementation skill, the majority of secondary male students possess below average level and female secondary students average level of meta-cognitive skills. Meta-Cognitive Skills third dimension of monitoring skill, the majority of secondary male students possesses high level and female secondary student's average level of meta-cognitive skills. Meta-Cognitive Skills fourth dimension of evaluation skill, the majority of secondary male and female students possess below average level of meta-cognitive skills. The present study depicted that gender does not affect students' meta-cognitive skills; most secondary male and female possess average levels of meta-cognitive skills. Both male and female have the same level of meta-cognitive skills. This is because both male and female can manage previous knowledge, plan for using strategies, and organize their thoughts and activities to complete a task, and modify or expand their existing meta-cognitive knowledge. Studies depict that the level of meta-cognitive skills of students is related to gender (Mohamed, 2012; Demirel et al., 2015; Jaleel & Permachandran, 2016; Garzon et al., 2020; Kaur & Saini, 2020).

The study found that from a locality point of view, the majority of meta-cognitive skills dimension, planning skill of secondary rural students possess below average level and urban students average level of meta-cognitive skills. Urban students have good ability to use previous knowledge, plan for using strategies, organization our thoughts and activities to complete a task rather than rural students. Meta-Cognitive Skills second dimension of implementation skill, the majority of secondary rural possess average level of meta-cognitive skills and urban have high level of meta-cognitive skills. This is because urban students have good implementation skill are able to independently use the resources and the capabilities to organize set goals. Meta-Cognitive Skills third dimension of monitoring skill, the majority of secondary rural students possesses above average level and urban possess very high level of meta-cognitive skills. Urban students have self-testing monitoring skill while learning in comparison to rural students. Meta-Cognitive Skills fourth dimension of evaluation skill, the majority of secondary rural students possess average level and urban students possess below average level of meta-cognitive skills. Because rural students have good evaluation skill to assess themselves with the skill levels and set for themselves during the planning process. Most secondary school students demonstrate above-average levels of metacognitive skills, while very few students fall into the low-level category. Research suggests that students' metacognitive skills are influenced by

their locality (Jaleel & Permachandran, 2016; Kaur & Saini, 2020).

The study found that, from a gender perspective, most male and female secondary students possess an average level of academic resilience. Similarly, a majority of both male and female students in rural and urban areas also show an average level of academic resilience. On the other hand, the fewest students from a gender perspective are males with low academic resilience and females with high academic resilience. Regarding localities, both rural and urban areas have the smallest proportion of students at a high level of academic resilience. Overall, most secondary students demonstrate above-average academic resilience, with very few falling into the high-level category. This is likely because both male and female students are generally able to manage stress, study pressure, and academic challenges effectively (Martin, 2002).

The present study explored that meta-cognitive skills affects the academic resilience of secondary students especially in the Planning Skill, Monitoring Skill and Evaluation Skill. This may be because those students who think they can do a task are more capable and engage in more meta-cognitive skills to succeed in their endeavors than those who think they are incapable. Students who believe they can do a task also engage in more meta-cognitive skills and use more cognitive methods. Studies depict that the meta-cognitive skills of students are related to academic resilience (Kocak & Boyaci, 2010; Narang & Saini, 2013; Mohan & Verma, 2020; Gorde, 2021).

It was found in the present study that gender affects the academic resilience of secondary students. The study shows that male have more academic resilience in comparison to female. The possible reason may be that the boys are more challenging, target-oriented, mentally strong, and quick decision-makers as compared to female students. High academic resilience refers to a student's ability to overcome challenges, stress, and setbacks in their academic life, such as exam pressure and difficult coursework (Fallon, 2010). Research has shown that academic resilience is significantly associated with gender (Isaacs, 2014; Mwangi et al., 2017; Olaseni, 2020; Gorde, 2021).

The present study found that locale affects the academic resilience of secondary students. The study shows the rural areas students have more academic resilience in comparison to urban areas students. This may be because students in rural areas in this 21st century cope effectively with academic challenges, stress, and pressure from studies. These results are also supported by the results of (Rutter, 2000; Pinki & Duhan, 2020).

The present study explored that Motivation & Ability to get Goals, Relationship with Peers & Adults, and Emotional Regulation & Physical Health are positively correlated to the meta-cognitive skills of secondary students. This may be because students with high meta-cognitive skills are accept challenging, tackle challenging tasks and achieve academic goals. They feel more capable, build stronger relationships with peers, and experience greater academic success (Fallon, 2010; Shimoni et al., 2019).

Conclusions

The major findings of the study are:

1) The metacognitive ability characteristics of planning and evaluation do not significantly differ between male and female students attending government secondary schools. However, the metacognitive skill dimensions of Implementation Skill and Monitoring Skill show a substantial difference between male and female pupils in government secondary schools.
2) Students in government secondary schools in rural and urban areas differ significantly in the metacognitive skills dimensions of planning, implementation, monitoring, and evaluation.
3) Students with strong and low academic resilience in government secondary schools do not significantly differ in their metacognitive abilities related to

Implementation Skill. Learners with high and low academic resilience, however, differ significantly in their strategy, evaluation, and tracking skills.

4) Male and female students attending government secondary schools do not significantly differ in the Academic Confidence component of academic resilience. Other aspects of academic resilience, such as sense of well-being, ambition and goal-achieving ability, relationships with fellow students and adults, and how one handles emotions and physical health, show notable variations, though.
5) When it comes to their interactions with peers and adults, kids in government secondary schools in rural and urban areas do not significantly differ in terms of their academic resilience. Other facets of academic resilience, including academic trust in itself, sense of well-being, commitment and goal-achieving ability, and emotional regulation and physical health, show notable variations, though.
6) Among students in government secondary schools, there was no discernible correlation between academic resilience and metacognitive abilities in the domains of academic trust and perceptions of well-being. Nonetheless, there is a strong correlation between academic resilience and metacognitive abilities in the domains of motivation and goal-achieving ability, relationships with peers and adults, and handling emotions and physical health.

Educational Implications

The results of the current study hold important implications for teachers, parents, policy makers, educators, administrators, students and other professional working in the field of education. The study's findings have the potential to enhance the education system and be applied in everyday life. Using meta-cognitive skills by the students, they become gain confidence. It will also help to be active learners of their own learning. High meta-cognitive skills are aware in different ways; they can impact their student's academic resilience. The results of this study will also be highly beneficial for researchers, curriculum planners and parents. In the present study, there is a difference in the meta-cognitive skills of students with respect to gender and locale; it is found that male students having high level meta-cognitive skills than female students and urban students having high meta-cognitive skills than rural students. The reason behind this may be that female students mostly depend on male's decisions, not use their own self-monitoring power and not think independently. On the other hand, male students having high meta-cognitive skills are more self-regulated learning, goal-oriented, accept challenges and use previous knowledge. They are able to independently use the resources they have chosen and implement the activities they have decided on, the less they need teachers support and guidance in implementing their learning plans. Teachers in the classroom can motivate female students to take an active role in their learning by allowing them to take control of their own education. Female students should discuss ideas with each other and their teacher. Also, parents and teachers should encourage their students to use one's own strategies to reach their goals.

The study identified significant differences in academic resilience related to gender and location, offering valuable insights for educators. Understanding these differences can guide targeted interventions to support students in overcoming challenges and achieving academic success. For instance, educators can tailor resilience-building strategies to address the specific needs of male and female students, acknowledging potential societal and cultural influences on resilience development. Similarly, recognizing the disparities in resilience based on locale highlights the significance of offering additional supplying assistance and materials to students in different geographical areas, whether

urban, suburban, or rural, to ensure equitable opportunities for academic success. By implementing tailored approaches that address gender and locale-specific factors impacting resilience, educators can foster an encouraging learning atmosphere conducive to holistic development of all the students, ultimately promoting their academic achievement and well-being. Understanding the profound influence of family environment on academic resilience underscores the need for educators to foster supportive relationships with families. By actively involving families in their children's educational journey, schools can harness the power of familial support to bolster students' ability to overcome academic challenges. Moreover, schools must create a nurturing and an environment where students feel respected and connected to their school community, fostering a sense of belonging. Teaching resilience skills, promoting a growth mindset, and providing necessary resources further empower students to navigate academic hurdles with confidence and perseverance. Through these efforts, educators can make sure every student has the chance to thrive academically, irrespective of their familial circumstances.

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