

Influence Of Metacognition On The Academic Resilience Of Senior Secondary School Students

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ABSTRACT:

This study aims to identify the influence of metacognition on the academic resilience of senior secondary school students. The ability to recognize and comprehend one's own mental processes is known as metacognition, and it is fundamental to learning and problem-solving skills. Being aware of one's own thinking is what it means to be metacognitive. Metacognition is the capacity to identify one's own cognitive patterns and coping strategies. Increasing students' awareness of their actions, motivations, and the potential applications of the skills they are learning in many contexts is beneficial. On the flip side, academic resilience describes the ability to tolerate and go past obstacles in the classroom. This research attempts to investigate how metacognitive abilities help senior secondary school students become more resilient learners, which in turn affects their academic performance. Using a standardized awareness measure, the researchers evaluate the academic resilience and metacognitive awareness of secondary school students. Establishing if there are significant differences between the gender in terms of academic resilience and metacognitive awareness is the aim of the research. Through the use of appropriate statistical procedures, the investigators gather and examine the data. Findings of this study revealed that Gender of a child have no impact on his or her Metacognitive awareness and Academic Resilience.

Key words: Metacognition, Academic resilience, *Academic Performance*.

INTRODUCTION

Education can be defined as the process of acquiring knowledge through various experiences and learning opportunities. Socrates believed that education is a person's dynamic power and that it has a significant impact on a person's growth on all levels, including their mental, emotional, social, physical, creative, spiritual, and ethical. "Quality education is not an expenditure; it is an investment in human capital." UNESCO (2013).

Cognition is the process of learning from impressions what is present in the world and where it is. Processing information is a task of cognition. It can also be described as the capacity to perceive the environment and react to it. It is a crucial component of living matter. It is a group of symbolic mental processes that include problem-solving, thinking, and reasoning. Simply put, cognition is "the act of knowing." It is information or a worldview. This information is retained in memory and affects how outside stimuli are processed. Thus, this interpretation or modification in behavior represents man's education. Knowledge and education are components of cognition, and a man embodies the relationship between the three.

Metacognition is a collection of skills that relate to "thinking about thinking" or "cognition about cognition," according to Jost, Kruglanski, and Nelson (1998). According to Arslan and Akin (2014), metacognitive thinking, which makes people conscious of both themselves and other people while addressing problems, is the greatest level of mental activity. According to Schraw and Dennison (1994), metacognition is the capacity to consider, comprehend, and manage one's learning. The term "metacognition" was first used in the context of educational and cognitive psychology by Flavell (1979), who also explored its two components, metacognitive knowledge and metacognitive experiences. Understanding one's own cognitive process is the subject of metacognitive knowledge, whereas the application of strategies developed from this understanding is the subject of metacognitive experiences. Both elements are linked and function as a unit. According to Costa (2001), metacognitive skills include goal-setting after learning, creating a plan to achieve those objectives, implementing the plan strategically, changing tactics, and, lastly, reflecting on the learning process. A tripartite metacognition paradigm was presented by Flavell (1987). The three parts of this new model are knowledge, control, and monitoring. Cultural learning, individual construction, and peer interaction are the three major components that contribute to metacognition. Culture and social learning help to improve metacognition. Children learn metacognitive skills through informal experiences and formal schooling. Individuals use a variety of ways to build metacognition. Individual constructs may involve phenomenological bootstrapping, in which individuals project their cognitive experiences onto others and use these experiences as the foundation for a broader study on the nature of cognition (Beckwith, 1991).

Veenman's Model of Metacognitive Skills: Veenman's model focuses on metacognitive skills and their role in academic achievement. These skills are particularly relevant to senior secondary students who face complex learning tasks and must navigate a challenging academic environment.

1. **Goal Setting:** Senior secondary students set academic goals and objectives to guide their learning. They might prioritize tasks, establish study plans, and create specific learning objectives to achieve academic success.
2. **Planning and Organization:** This skill involves senior secondary students' ability to devise strategies, create study schedules, and organize their learning resources effectively. By planning and organizing, students can manage their time efficiently and allocate appropriate efforts to different subjects or tasks.
3. **Monitoring:** Senior secondary students employ monitoring strategies to assess their comprehension, progress, and performance. They may use self-assessment, reflection, and feedback from teachers to gauge their understanding of the material and make necessary adjustments to their learning strategies.
4. **Evaluating:** Senior secondary students evaluate their learning outcomes and progress toward their goals. They assess the effectiveness of their study strategies, identifying strengths and areas for improvement, and adapt their approaches accordingly.
5. **Revision and Adaptation:** This skill involves the ability of senior secondary students to revise their strategies and adapt their learning approaches when facing challenges or changing circumstances. Flexibility and adaptability are crucial for navigating the dynamic academic environment at this level.

Academic Resilience

In the words of Elizabeth Edwards "Resilience is accepting your new reality, even if it's less good than the one you had before. You can fight it, you can do nothing but scream about what you've lost, or you can accept that and try to put together something that's good." Also, Marry Holloway states, "Resilience is knowing that you are the only one that has the power and the responsibility to pick yourself up." Resilience is a multidimensional concept that refers to an individual's ability to adapt, recover, and thrive in the face of adversity. It involves psychological, emotional, and cognitive processes that enable individuals to bounce back from challenges and maintain well-being. Academic resilience helps students to think positively, making them optimistic, and with the help of it, they can achieve very good educational outcomes despite lots of adversities (Eva et al., 2021; Sari & Indravati, 2017). It makes them bend like bamboo instead of breaking them. A highly academically resilient pupil can control their destiny, accept their battle, use adversity as their compass, and conserve their inner energy. It makes them live in the moment, develop flexibility, behave according to situations, and easily adapt to any kind of situation.

Positive Youth Development (PYD) Theory: Positive Youth Development (PYD) theory emphasizes the importance of nurturing positive attributes and strengths in young individuals to promote resilience and well-being. Within the context of academic resilience, this theory suggests that fostering positive development in senior secondary students can enhance their ability to overcome academic setbacks and challenges. Key components of PYD theory relevant to academic resilience include:

6. **Positive Relationships:** Senior secondary students with strong social support systems, such as caring teachers, supportive peers, and involved parents, are better equipped to navigate academic difficulties and remain motivated.
7. **Engagement in Meaningful Activities:** Encouraging senior secondary students to engage in extracurricular activities, community service, or hobbies can contribute to a sense of purpose and resilience in the face of academic challenges.
8. **Skill Development:** Providing opportunities for skill development, such as problem-solving, time management, and effective study habits, can equip senior secondary students with the tools to tackle academic obstacles.

REVIEW OF RELATED LITERATURE

The phrase 'Review of Related Literature' consists two key words, 'Review' and 'Literature'. Review refers to the process of organizing the existing quantum of knowledge in a specific area in a systematic way to show that the current study would add knowledge to that particular area. Literature refers to the already existing knowledge of a specific area of research in a particular field. The Review of Related Literature is an important step in the research process.

● **Studies related to Metacognition:**

Sumarno et al. (2022) investigated the correlation between the metacognitive parameters and English writing skills. Metacognitive Awareness Inventory and a writing rubric were used to collect data. The analyses of data showed that there was a significant correlation between metacognitive parameters and writing skills. Further, English writing skills were influenced to an extent of 41.7% by both the knowledge about cognition as well as the regulation of cognition.

Tibken et al. (2022) tested the role of motivational dispositions and metacognitive competences longitudinally with a sample of 341 gifted and non-gifted underachievers studying in grades 6 and grade 4. Declarative knowledge and procedural knowledge were assessed with reading comprehension. Path analyses were performed to analyse the data. The results showed that procedural metacognition had an incremental effect on school achievement. The declarative knowledge influenced procedural metacognition ($\beta = .169$), which in turn mediated the effect on school achievement.

Hidayat et al. (2021) explored the correlation between mathematical modelling and metacognition with a moderating effect of academic year level by Structural Equation Modelling (SEM) approach. A sample of 538 students were selected as participants for the study by employing Cluster random sampling method. Out of the total 538, 133 (24.7%) were first year students, 223 (41.4%) were second year students and 182 (33.8%) were third year students. Correlational research design was adopted. The results showed that there was a statistically significant relationship between metacognition and mathematical modelling.

Koyuncu et al. (2021) examined the moderator role of gender and socioeconomic factors in the relationship between reading performance of the students and their metacognitive skills. The sample comprised of 6890 students, out of which 3396 (49.30%) were female and 3494 (50.70%) were male. The sample was further classified into low, 2273 (32.99%) students, medium 2273 (32.99%) and high 2344 (34.02%) socioeconomic level. Structural Equation Modelling (SEM) was used to test the moderator effects and it showed that gender and socioeconomic level moderated the relationship between metacognitive skills of the students and their reading performance. Male students had better reading performance than female students in the low and medium levels and vice versa in the high socioeconomic level.

Omprakash et al. (2021) conducted a study is to evaluate the reliability as well as the construct validity of the Metacognitive Awareness Inventory (MAI) among medical students by using factor analysis. A cross sectional method was adopted. In EFA 12 items with less than 0.40 factor loading were removed and the remaining factors yielded an internal consistency of above 0.9. EFA yielded a total of six factors. CFA using SEM explained the 43 hypothesized model for each item. Therefore, MAI with 40 items designed by Schraw was a valid and reliable to be used in Indian context.

● Studies related to Academic Resilience:

Eva et al., (2021) have conducted a study in COVID-19 pandemic period to find out association of Academic Resilience with subjective well-being of students. For present theoretical study literature study method was used. Results indicate that in maintaining and improving subjective will-being of students the resilience plays important role.

Romano et al., (2021) designed correlational study to explore relationship among school engagement, perceived teacher emotional support, and academic resilience. Study comprises two hundred and five high-school students with age ranges from 14 to 19 yrs. To test the hypotheses structural equation model was used. Results revealed that academic resilience positively correlated to perceived teacher emotional support and school engagement. Further, perceived teacher emotional support was found positively associated with school engagement.

Karki et al., (2021) examined association between resilience and social support through their study. For this cross-sectional study two hundred women who confronting traumatic events in their life were selected. To assess social support and the level resilience CD- RISC (The Connor-Davidson Resilience Scale) and MSPSS (the Multidimensional Scale of Perceived Social Support) were used respectively. Correlation coefficient and t-test were used to analyze the obtained data. Results reported that, resilience associated positively and significantly with social support, employment and education. Whereas, no significant association was were found between resilience and marital status, religion, and age. Further they also reported resilience and ethnicity shared negative correlation with each other that means the Ss who related to untouchable groups cherished lower level of resilience.

Hapsari et al., (2021) arranged a study to assess the Academic resilience during the Covid19 pandemic to know the ability of pupils to reply, adapt, and remain persistent in tough situations. Data was collected through google form using resilience scale from Cassidy. They reported from the 61 Ss only one Ss was in very high category, twenty one Ss were in high category, 25 Ss were lies in moderate category, and in low and very low category 9 and 5 subjects respectively.

Saddique et al., (2021) designed a study to examine effect of gender, resilience, well- being, and social support on psychological distress. Quantitative method was used for this study. Data were gathered from three hundred eighty nine Ss studying in University. Findings of current study showed the psychological distress has positive association with resilience, perceived social support, and well-being. But no significant gender difference was found in respect of resilience.

Need and Significance of the Study

The study on the "Influence of Metacognition on the Academic Resilience of Senior Secondary School Students" addresses an important intersection between cognitive processes, student behavior, and academic outcomes.

Metacognition is one's awareness and understanding of their own thought processes. Investigating its influence is crucial as it can impact how students approach learning, problem-solving, and academic challenges. Gaining insights into metacognitive processes can inform educational strategies and interventions to enhance students' cognitive abilities, leading to improved academic performance and resilience.

Academic resilience is the ability to bounce back from setbacks and challenges in the academic setting. Identifying factors that contribute to resilience is essential for fostering a positive learning environment. By exploring the link between metacognition and academic resilience, the study can contribute to the development of targeted interventions that enhance students' ability to overcome academic difficulties and persevere in their studies.

Adolescence is a critical period in educational development, where students face increased academic demands and challenges. Understanding metacognitive influences during this stage is essential for tailoring educational approaches. The study can provide insights specific to senior secondary school students, guiding educators and policymakers in designing curriculum and support systems that cater to the unique cognitive and emotional needs of this age group.

Schools and educational institutions constantly seek evidence-based practices to improve student learning outcomes. Understanding the role of metacognition in academic resilience can contribute to the development of effective teaching methods. Findings from the study can inform educators about the importance of fostering metacognitive skills in students, leading to the design of instructional strategies that promote self-awareness, self-regulation, and effective learning habits.

Academic challenges can have a significant impact on students' mental health. Examining the relationship between metacognition and academic resilience can shed light on the psychological factors that contribute to students' ability to cope with stress and adversity. The study may offer insights into how metacognitive skills contribute to students' emotional well-being, helping educators and counselors implement targeted interventions to support students in managing stress and maintaining a positive mindset.

The study on the influence of metacognition on the academic resilience of senior secondary school students is valuable for both theoretical and practical reasons. It adds to the existing body of knowledge in education and psychology, while also providing actionable insights for educators, administrators, and policymakers to enhance the overall learning experience for students in this critical academic stage.

OBJECTIVES:

1. To find out whether there is significant relationship between Metacognition and academic resilience of senior secondary students.
2. To find out whether there is significant relationship between Metacognition and academic resilience of senior secondary students with respect to gender.

HYPOTHESIS:

H₀₁: There is no significant relationship between Metacognition and Academic resilience of senior secondary students.

H₀₂: There is no significant relationship between Metacognition and Academic resilience of senior secondary students with respect to gender.

RESEARCH METHOD:

Descriptive survey method was used in the study. The focus is on understanding the relationship between metacognition and academic resilience in senior secondary school students.

Population: The population proposed in the current study was comprised of senior secondary students from state board schools in Yamuna Nagar district.

Sample: In the present study, the investigator used a random sampling technique for selecting the sample. The investigator randomly selected schools from the Yamuna Nagar district of Haryana state. 0.5 percent of the total population of senior secondary students in Yamuna Nagar district was considered for the study.

Sampling technique: A list of Senior secondary schools of Yamuna Nagar District of Haryana was prepared and schools were randomly selected. Then from the selected schools data was collected taking forward the research through Descriptive survey method.

Sampling scheme for Yamuna Nagar district: There are total 221 schools in Yamuna Nagar district, of which 78 are Government schools and 143 Private schools. From the total population 180 students are selected as the sample size of Yamuna Nagar district and the data from 180 students was collected from schools situated in six blocks of district Yamunanagar decided for research purpose. There are 73 males and 107 females and there is an equal distribution of sample on the basis of gender.

Procedure: The investigators went to the schools listed in Table 1 and asked those in charge for permission to administer the survey. For this investigation, the researcher chose Senior secondary level, standard XII. There are one hundred eighty pupils in this group altogether. The students in the chosen sample were given the Metacognitive Awareness scale as well as the Academic Resilience scale by the researchers. They received appropriate guidance on how to complete the inventory's responses. Students were given the allotted time by the investigators to record their answers in the inventory. Following administration, the researchers gathered the students' response sheets. Using a five-point rating system, the investigators assessed the response sheets. Every student's Metacognitive Awareness Inventory as well as the Academic Resilience inventory results were coded and subjected to statistical computations. Calculations

were made for the mean, standard deviation, percentiles, and test of significant difference between means.

Limitations of the Study: The present study is limited to check the metacognitive awareness and Academic Resilience of secondary school students only. Moreover, the study is limited to Yamuna Nagar district only.

RESEARCH TOOLS USED:

- “Metacognitive Scale” by Mubarak Singh and Ana Bali was used to find out the metacognition of senior secondary school students.
- “Academic Resilience scale” by Mihir Kr. Mallick and Simranjit Kaur was used to find out the academic resilience of senior secondary school students.

ANALYSIS AND INTERPRETATION OF THE DATA

1. Analysis and interpretation of the Data pertaining to Metacognition and Academic resilience of senior secondary students with respect to gender.

Objective 2: To study the Metacognition and Academic resilience of senior secondary students with respect to gender.

H0₂: There is no significant relationship between Metacognition and Academic resilience of senior secondary students with respect to gender.

Table no. 2: Data and result of test of significant difference relationship between Metacognition and Academic resilience of senior secondary students male sample

| Variables | r | S.Er | Confidence interval | Shared variance | Interpretation |
|---------------------|-------|-------|---------------------|-----------------|----------------|
| Metacognition | 0.092 | 0.053 | 0.1958 to 0.0118 | 0.84% | significant |
| Academic resilience | | | | | |

The male senior secondary student sample's metacognition and academic resilience have a significant link ($r=0.092$), as indicated by the value being higher than the 0.05 level significance threshold of 0.098. A shared variance of 0.84% is shown by the derived "r" value. This indicates that, for the male sample of senior secondary school students, metacognition and academic resilience account for roughly 1% of the shared variation.

Table no. 3: Data and result of test of significant difference relationship between Metacognition and Academic resilience of senior secondary students of female sample

| Variable/ Dimension | R | S.Er | Confidence interval | Shared variance | Interpretation |
|---------------------|-------|-------|---------------------|-----------------|----------------|
| Metacognition | 0.020 | 0.101 | 0.2189 to -0.1789 | 0.04% | significant |
| Academic resilience | | | | | |

considering that the value of $r=0.020$ is higher than the significance level of 0.098 at the senior secondary school female sample, there is a significant link ($r=0.020$) between metacognition and academic resilience. A shared variance of 0.04% is shown by the derived "r" value. This indicates that, for the female sample of senior secondary students, metacognition and academic resilience account for approximately 0.04 percent of the shared variation. Therefore, we disapprove of H0₂.

Findings

- For male senior secondary students, the relationship between metacognition and academic resilience is minimal.
- Senior secondary female pupils' academic resilience and metacognition are seldom correlated.

MAJOR FINDINGS

1. Senior secondary school pupils' academic resilience and metacognition are significantly correlated.
2. The correlation between senior secondary male students' academic resilience and metacognition is minuscule.
3. There exists a negligible relationship between the Metacognition and Academic resilience of senior secondary female students .

EDUCATIONAL IMPLICATIONS

Specifying the research implication that will influence future studies pertaining to "academic achievement" is a crucial step once the study has been conducted and conclusions drawn. The results of this study are significant for educators in general, including teachers, administrators, principals, parents, and policymakers. The researcher has created an

educational resilience measure specifically for this study. Engaging in metacognitive exercises that prompt students to consider their knowledge, interests, and abilities not only aids in self-awareness development but also provides educators with useful data for their teaching. It is essential to support MCS in kids since metacognition is assumed to play a fundamental role in learning. To promote the metacognitive climate, educators, parents, and the real students should each play a different role. Therefore, without favoring any group within the classroom over another, teachers can manage the teaching strategies used to help students develop their metacognition.

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