Relationship Between Metacognitive Knowledge And Study Habits Between Achievers And Non-Achievers Among College Students

Dissertation submitted in partial fulfilment of the requirements for the award of

Bachelor of Science in Psychology

By

Reshma Ramesh

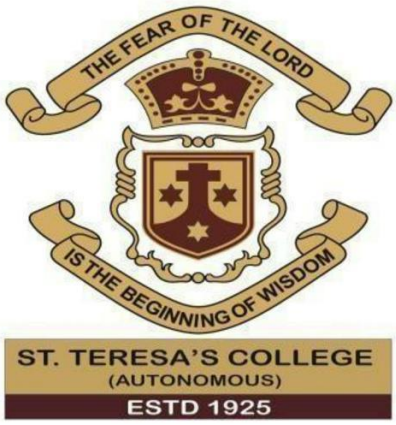
SB21PSY060

Under the guidance of

Ms.Jisha Sekhar

Assistant Professor

Department of Psychology



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Date:

Ms. Bindu John	Ms. Jisha Sekhar
Head of the Department	Assistant Professor
Department of Psychology	Department of Psychology
St. Teresa's College, Ernakulam	St. Teresa's College, Ernakulam

External Examiner 1: ……

External Examiner 2: …….

Internal Examiner: …….

Declaration

I, Reshma Ramesh, do hereby declare that the work represented in the dissertation embodies the results of the original research work done by me in St. Teresa's College, Ernakulam under the supervision and guidance of Ms. Jisha Sekhar, Assistant Professor, Department of Psychology, St. Teresa's College, Ernakulam, it has not been submitted by me to any other university or institution for the award of any degree, diploma, fellowship, title or recognition before.

Place: Ernakulam Reshma Ramesh

Date:

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Reshma Ramesh

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Abstract

Metacognitive knowledge refers to an individual's awareness and understanding of their own cognitive processes. It involves knowing about how one learns, thinks, and solves problems. Study habits refer to the behaviours and techniques that individuals employ to facilitate their learning and academic performance. These habits can include activities such as reading, note-taking, time management, and maintaining physical and mental wellbeing. The current study investigated the relationship between metacognitive knowledge and study habits between Achievers and Non-achievers among college students. The sample consisted of 150 college students in the age group of 18-22 years. The data was collected using Metacognitive Awareness Inventory developed by Sajna Jaleel& Premachandran and Study Habits Checklist. Pearson correlation and independent t-tests were used for data analysis. The results revealed that there is a moderate negative correlation between metacognitive knowledge and study habits. Additionally, it was also found that there is no significant difference in metacognitive knowledge and study habits between Achievers and Non-Achievers.

Keywords: *Metacognitive knowledge, Study habits*

CHAPTER-I

INTRODUCTION

"Intelligence growth should commence at birth and ease only at death"- (Albert Einstein)

In today's fast-paced and information-rich world, students are faced with the daunting task of navigating a vast sea of knowledge while tackling increasingly complex challenges. Amidst many information and constant changes, metacognition stands out as a helpful tool for students to improve how they learn and adjust to new things. Metacognition is a self-monetary process which helps the individual to find out strategies to learn and memorize. This ability helps the students to gain achievement orientation, either mastery or performance, which in turn results in academic success (Fariha Gula, Shumaila Shehzad,2012).

Metacognition plays a crucial role in various aspects of human cognition and behaviour, from academic achievement to everyday problem-solving and decision-making. By becoming more aware of our own thought processes and learning strategies, we can become more effective learners, problem solvers, and decision makers. Metacognition, often described as "thinking about ones own thinking,"(Flavell,1979) equips students with the awareness and understanding of their own cognitive processes, enabling them to become more effective learners and problem solvers. By reflecting on their learning strategies, monitoring their comprehension, and adjusting their approaches as needed, students can tackle academic tasks with confidence and autonomy. Moreover, metacognition fosters lifelong learning by empowering students to navigate the ever-evolving landscape of knowledge and skills. The most successful students are those with strong metacognitive skills who manage, monitor and evaluate their performance, and have confidence in their abilities to perform successfully(Catherine M. Aurah,2013).

Metacognition is considered important for learning as it serve as a strong predictor of academic success (Dunning, Johnson, Ehrlinger & Kruger, 2013). Students with strong metacognitive skills exhibit good academic performance in contrast to the students with poor metacognitive skills. Training can help the low achievers to improve the metacognitive skills as well as academic performance. People with poor metacognitive skills are considered as incompetent and that the individual differences have a great impact on the students skills (Kruger and Dunning,2019). Understanding metacognition is essential not only in educational contexts but also in everyday life. It enables individuals to approach tasks more strategically, adapt to new situations, and learn from their experiences. Overall, metacognition is a fundamental aspect of human cognition that shapes how we perceive, understand, and interact with the world around us.

Study habits play a pivotal role in shaping the academic success of students. From meticulously organizing study schedules to adopting effective learning strategies, the habits students cultivate significantly impact their ability to grasp, retain, and apply knowledge. Study habits contribute significantly in the development of knowledge and perceptual capacities. Study habits tell a person how much he will learn and how far he wants to go, and how much he wants to earn. These all could be decided with the help of one's study habits, throughout the life. Therefore, it is assumed that study habits are correlates of scholastic or academic achievement (Mahwish Rabia,2017).

Learning how to study or to develop good study habits is a lifelong process, and one should be ready to modify one's method of study according to the need of the time. The development of good study habits is the highway to the goals of an individual, whatever they are. A simple, small change in study habits makes a big difference in goal setting and organization of one's life. The success of an individual depends upon his study habits.

Education is the manifestation of perfection already existing in man. The tool enabling this manifestation is study habits. (A.S Arul Lawrence,2014).

Arieta, Gementiza, and Saco (2017) highlighted that study habits play a significant role in students' life. The success or failure of each student depends on their study habits. Study is an art and requires practice and effort. The success of each student depends on the ability, intelligence, and action of the students. Thus, many effective study habits can help a student to improve. Fouche (2017) described that good study habits like doing homework, actively participating in class, managing time, staying focused, and working hard showed a significant positive correlation on their academic performance. Without developing study habits, students cannot perform and improve their academic performance.

Metacognition

Metacognition is defined as the activity of monitoring and controlling one's cognition. It refers to what we know about our cognitive processes and how we use these processes in order to learn and remember (Ormrod, 2004). Metacognition is the individuals' awareness and comprehension of processes of regulating their mental state, skills, memory and behaviour (Scarr and Zanden,1984). Metacognition refers to the awareness and understanding of one's own thought processes, including the ability to monitor, regulate, and control cognitive processes. It involves thinking about one's thinking and involves the ability to reflect on and manage one's own mental processes in order to improve learning and problem-solving. Metacognition is the ability to use prior knowledge to plan a strategy for approaching a learning task, take necessary steps to solve a problem, reflect on and evaluate results, and modify one's approach as needed. Metacognition is the knowledge about and regulation of one's own cognitive activities in learning processes(Flavell,1979). Metacognitive skills are crucial for learning and can significantly enhance academic performance. Individuals with strong metacognitive abilities are often better at setting goals,

managing their time, and adapting their strategies to different situations. Teachers often incorporate metacognitive strategies into their instruction to help students become more aware of their thinking processes and improve their learning outcomes.

Core Concepts of Metacognition

According to Flavell (1979), Metacognition is most commonly divided into two distinct, but interrelated areas known as metacognitive knowledge and metacognitive regulation.

Metacognitive Knowledge. Metacognitive knowledge refers to an individual's awareness and understanding of their own cognitive processes. It involves knowing about how one learns, thinks, and solves problems. Metacognitive knowledge is essential for effective learning and problem-solving as it allows individuals to plan, monitor, and evaluate their own cognitive activities. It is referred to as the awareness of one's own thinking and requires one to accurately and exactly define his/her thought or knowledge.

Metacognitive Regulation. It is the regulation of cognition and learning experiences through set of activities that help people control their learning such as planning, information management strategies, comprehension monitoring, debugging strategies, and evaluation of progress and goals. It is the ability to manage one's own thinking process.

Types of Metacognitive Knowledge

Declarative Knowledge. It is the simplest and lowest level of knowledge which involves memorization of facts and data offered in the default settings of a learning environment. It is the knowledge about one's self as a learner and what can influence one's performance(Schraw and Moshman,1995).

Procedural Knowledge. Procedural knowledge is a higher form of knowledge that is discerned with the automated understanding of how to use different problem-solving

strategies and cognitive skills without conscious attention or reasoning about their rationale (Schraw and Moshman,1995).

Conditional Knowledge. It is the highest level of knowledge, as it requires understanding how, when and why to use each strategy and cognitive skill(Schraw and Moshman,1995).

Theories Related to Metacognition

Flavell's Model of Metacognition. Developed by John Flavell (1979) this influential model conceptualises metacognition as having 2 components:

Metacognitive Knowledge. Awareness of your own cognitive processes, like memory, understanding, and learning strategies.

Metacognitive Regulation. The ability to monitor and control your cognition, adapting your approach based on needs.

Nelson and Narens' Metamemory Framework. Nelson and Narens (1984) expanded on Flavell's model by introducing the concept of metamemory in 1984. This framework focuses on memory-specific metacognition. It suggests that individuals have a metacognitive knowledge base about their memory, including their understanding of memory tasks and strategies. The framework highlights the role of metacognitive experiences in monitoring and controlling memory processes. This framework includes 3 levels.

Object Level. The task or content being learned.

Meta Level Knowledge about one's memory processes.

Control Level. Regulation and adjustment of memory processes.

Brown's Metacognitive Development. Ann L. Brown (1987) proposed a developmental model of metacognition, suggesting that metacognitive skills develop over time. The model includes three stages: externalisation (using external tools for problem-

solving), internalisation (using mental strategies), and automaticity (automated use of metacognitive strategies).

Factors Affecting Metacognitive Knowledge

Metacognitive awareness, the ability to recognize and understand one's own cognitive processes, is influenced by various factors. These factors can impact an individual's level of awareness and the effectiveness of their metacognitive skills. Here are some key factors influencing metacognitive awareness.

Developmental Factors. Metacognitive awareness tends to develop and mature over time. Young children may have limited metacognitive abilities, but as individuals progress through adolescence and into adulthood, their metacognitive skills generally become more sophisticated.

Educational Experience. Exposure to diverse learning experiences and educational settings can influence metacognitive awareness. Students who are actively engaged in a variety of learning tasks and receive explicit instruction on metacognitive strategies are likely to develop higher levels of awareness.

Cognitive Abilities. Cognitive abilities, such as working memory capacity and executive functions, can impact metacognitive awareness. Individuals with strong cognitive abilities may be better equipped to monitor and regulate their thinking processes effectively.

Learning Environment. The characteristics of the learning environment play a significant role. Environments that encourage reflection, self-assessment, and open communication about learning processes can foster metacognitive awareness.

Teaching and Guidance. Effective teaching practices that emphasise metacognitive strategies and provide guidance on how to approach learning tasks can enhance metacognitive awareness. Teachers who model and encourage reflective thinking contribute to the development of metacognitive skills in students.

Feedback and Assessment. Timely and constructive feedback provides individuals with information about the effectiveness of their learning strategies. Assessments that require self-reflection can also contribute to metacognitive awareness by prompting individuals to evaluate their understanding and performance.

Motivation and Interest. Motivation and interest in a task can influence metacognitive awareness. Individuals who are intrinsically motivated or find a task interesting may be more likely to reflect on their strategies and monitor their progress.

Cultural Difference. Cultural differences can impact metacognitive awareness. Cultural norms related to communication, self-reflection, and individualism vs. collectivism may shape how individuals approach and express their metacognitive processes.

Individual Differences. Personal characteristics, such as personality traits, self-efficacy, and mindset, can contribute to individual differences in metacognitive awareness. For example, individuals with a growth mindset may be more inclined to engage in metacognitive reflection.

Technology Use. The integration of technology in learning environments can influence metacognitive awareness. Technology tools that provide immediate feedback, tracking of progress, or facilitate collaborative learning experiences can impact how individuals monitor and adjust their learning strategies.

Study habits

Study habits refer to the behaviours and techniques that individuals employ to facilitate their learning and academic performance. These habits can include activities such as reading, note-taking, time management, and maintaining physical and mental well-being. Good study habits are essential for effective learning and can contribute to academic success. They help individuals in organising their study materials, understanding the content, and preparing for tests. Study habits are considered to be a significant factor in determining a

student's academic performance. Study habits can vary among individuals, and what works for one person may not work for another. It is crucial for students to develop study habits that are personalised and effective for their own learning styles and needs. Study habits can be described as effective or ineffective depending upon whether or not they serve the students well. Study habits are commonly known as the usual behaviour or habitual practices by a person in order to study and learn effectively. Study habits help students make their studies easier to understand and make their learning experience comfortable and enjoyable.

Types of Study Habits

Active Reading. Engaging with study materials actively by highlighting, underlining, or annotating important information while reading.

Note-Taking. Adopting efficient note-taking strategies, such as the Cornell method or mapping, to organise and summarise information.

Flashcards and Mnemonics. Using flashcards for quick review and memorization, and creating mnemonic devices to aid memory recall.

Mind Mapping. Creating visual representations of information through mind maps to visualise connections between concepts.

Test-Taking Strategies. Developing effective test-taking strategies, including time management during exams and understanding question formats.

Breaks and Pomodoro Technique. Incorporating short breaks during study sessions and using the Pomodoro Technique (short, focused intervals of work followed by breaks).

Visualisation Techniques. Using visualisation techniques to mentally picture and reinforce the understanding of complex concepts.

Theories Related to Study Habits

Cognitive Load Theory. Cognitive Load Theory proposed by John Sweller (1988) suggests that learning is more effective when the cognitive load, or mental effort, is

appropriately managed. This theory emphasises the importance of presenting information in a way that reduces extraneous cognitive load, allowing learners to focus on essential elements. Understanding cognitive load can guide the development of study strategies that optimise learning efficiency.

Information Processing Theory. The Information Processing Theory formulated by George A. Miller (1950) explores the cognitive processes involved in how humans encode, store, and retrieve information. It suggests that information undergoes systematic transformations as it moves through these stages, mirroring the functions of a computer's central processing unit. Drawing inspiration from computer science, this theory likens the human mind to a computer, emphasising the step-by-step flow of information.

Goal Setting Theory. The theory proposed by Edward Lock and Gary Latham(1968) posits that setting specific and challenging goals can lead to higher performance and increased motivation.

Social Cognitive Theory. Social Cognitive Theory developed by Albert Bandura in 1986, posits that individuals learn by observing others and modelling their behaviour. According to Social Cognitive Theory, people acquire new behaviours through a process called observational learning. Individuals observe and imitate the actions of others, and the likelihood of imitation is influenced by factors like the model's characteristics, the observer's attention, and the perceived consequences of the behaviour.

Factors Affecting Study Habits

Study habits are influenced by a variety of factors that can impact how individuals approach and engage in their learning activities.

Motivation. Motivation plays a crucial role in shaping study habits. Individuals who are motivated to achieve their academic goals are more likely to adopt effective study habits.

Motivation can be intrinsic (personal interest in the subject) or extrinsic (external rewards or pressure).

Time Management. Effective time management is a critical factor in determining study habits. Individuals who plan and allocate dedicated time for studying, set realistic goals, and avoid procrastination are more likely to develop positive study habits.

Environment. The study environment can impact study habits. A quiet, well-organised, and comfortable study space with minimal distractions can contribute to focused and effective study sessions.

Goal Setting. Clear and specific academic goals influence study habits. Individuals who set achievable short-term and long-term goals are more likely to engage in purposeful study habits aligned with those objectives.

Learning Style. Individuals have different learning styles, and study habits often reflect these preferences. Some may prefer visual aids, others may benefit from auditory learning, and understanding one's learning style can guide the adoption of suitable study habits.

Self-Discipline. Self-discipline involves the ability to stay focused on tasks and resist distractions. Individuals with strong self-discipline are more likely to adhere to a consistent study routine and avoid procrastination.

Prioritisation Skills. Effective study habits involve prioritising tasks based on importance and deadlines. Individuals who can identify and prioritise tasks are better equipped to manage their study time efficiently.

Health and Well-being. Physical and mental well-being directly affect study habits. Adequate sleep, regular exercise, and a balanced diet contribute to cognitive functioning and the ability to engage in effective study sessions.

Social Support. The presence of a supportive social network, including peers, family, and mentors, can positively influence study habits. Collaborative study sessions, sharing resources, and seeking advice from others contribute to a conducive learning environment.

Technology Use. Technology can influence study habits, both positively and negatively. Effective use of educational technology, such as online resources and study tools, can enhance learning, while excessive use of distracting technologies may hinder habits.

Statement of the Problem

To investigate the relationship between metacognitive knowledge and study habits between Achievers and Non achievers among college students.

Rationale of the Study

This study is conducted to analyse the relationship between metacognitive knowledge and study habits among Achievers and Non-Achievers among college students. The rationale for investigating the relation between metacognitive knowledge and study habits stems from the critical role these factors play in academic success. Metacognitive knowledge involves an individual's awareness and understanding of their own cognitive processes, allowing them to regulate and control their learning. On the other hand, study habits encompass the techniques and strategies employed by students to acquire and retain information. Understanding the relationship between these two aspects is crucial for educators, as it could provide insights into enhancing students' learning experiences and outcomes. By exploring the relation, it aims to uncover how students' metacognitive knowledge influences the development and effectiveness of their study habits and this investigation holds the potential to inform educational practices, guiding educators in fostering metacognitive skills that can positively impact students' study routines, empowering students with the tools necessary for more efficient and self-regulated learning. Metacognitive skills are crucial for lifelong learning and problem-solving. Effective study habits and metacognitive skills contribute to a positive and

fulfilling educational experience. This study aims to promote student well-being by creating conditions that support their academic success, reduce stress, and enhance their overall satisfaction with the learning process. Also educational institutions and educators can benefit from the study by gaining insights into the factors that influence students' study habits. This knowledge can be applied to refine teaching methods, curriculum design, and support services, creating an environment that nurtures effective learning.

CHAPTER-II

REVIEW OF LITERATURE

A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period. A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis. The purpose of a literature review is to collect relevant, timely research on your chosen topic, and synthesize it into a cohesive summary of existing knowledge in the field.

Maria Sofologi and her colleagues (2023) investigated the pattern of relations among the tacit knowledge of high school teachers, their professional development, and their metacognitive knowledge concerning their teaching practices in the title “The Effect of Secondary Education Teachers’ Metacognitive Knowledge and Professional Development on Their Tacit Knowledge Strategies”. Two hundred and seventy-nine secondary school teachers of both sexes, between the ages of 30 and 59 years, with teaching experience of between 1 and 19 years, participated in the study. Path analysis indicated relationships between teachers’ metacognitive knowledge regarding difficulties in classroom management and in the use of modern methods and technologies on the one hand, and the use of certain tacit knowledge strategies on the other. In addition, teachers’ professional development, especially their ability to interact in socially heterogeneous groups, was also found to have an effect on their tacit knowledge strategies.

Juliaans Eliezer Rulland Marantika (2021) analysed the relationship between metacognitive ability and learning autonomy as a strategy for improving student learning outcomes. in their study titled “Meta cognitive ability and autonomous learning strategies in improving learning outcomes”. The research sample was 30 students from the first semester department of language and arts of 2018/2019, who were chosen randomly. Data were collected through questionnaires and tests. They used correlation descriptive methods. The

results showed that there was a significant correlation between metacognitive ability, learner's autonomy, and learning outcomes in Indonesian language courses.

In a study titled "the learners' study habits and its relation on their academic performance", conducted by Jhoselle Tus, Francis Rayo, Reymark Lubo, Mark Anthony Cruz4 (2020) from journal International Journal of All Research Writings,126 Grade 11 senior high school learners were selected from a Private School in Bulacan, Philippines. The researchers used the descriptive-correlation method to look for the relationship between the dependent and independent variables. The study highlights the importance of enhancing study habits, especially in note-taking, reading ability, and health, to potentially improve academic performance. The paper discusses the importance of study habits in academic success, investigates the relationship between study habits and academic performance, finds study habits at an average level, and suggests improving habits like note-taking, reading ability, and health to enhance academic performance. The main findings of the study indicate that there is no significant relationship between study habits and academic performance among Grade 11 senior high school learners.

Jasgeet Kaur,Dr. Pankaj singh (2020) conducted to explore the connection between study habits and academic performance of secondary school students across various schools in the city of Ludhiana in the title "Study habits and Academic performance: A comparative analysis". For the purpose of this study a sample of 120 students (60 males and 60 females) were each chosen randomly from the schools. The age range of students was 13-16 years. The data was analysed using correlation and t-test. Results revealed a negative correlation between study habits and academic performance whereas, through t –test it was confirmed that there is a significant difference between study habits and academic performance although no significant gender differences were observed between the two variables.

Jhoselle Tus (2020) did a study titled “The influence of study attitudes and study habit on the academic performance of the students”. The study respondents were the senior high school students in a Catholic School in Bulacan, Philippines. The Descriptive-correlational research method was utilised to describe the respondents' profile in terms of their study attitudes, study habits, and academic performance. A total of one hundred thirty (130) senior high school students participated in this study. The null hypothesis at .05 alpha level of significance was tested to determine the influence of study attitudes and study habits on the students' academic performance. The computed multiple regression analysis results revealed that study attitudes and study habits do not significantly affect senior high school students' academic performance.

Rasha M.Abderlrahman (2020) aims to explain the relationship and impact of metacognitive awareness and academic motivation on student's academic achievement in the title “Metacognitive awareness and academic motivation and their impact on academic achievement of Ajmal university students”. The purposive sample consisted of 200 students (140 females and 60 males) studying sociology in the College of Mass Communication and Humanities at Ajman University, UAE during the academic year 2015–2016. The range of the age varies between 20 and 29 years, with an average age of 23 years. They used Academic motivation scale, The MAI validation and reliability, Data analysis.

Heli Kallio,Kalle Vitra,Manne Kallio (2018) assess to what extent self-evaluation can be predicted by the other components of metacognitive awareness in the title “Modelling the components of metacognitive knowledge”. The model is tested empirically among vocational education students (N= 578) using the Metacognitive Awareness Inventory (MAI). The findings of this study extensively confirm that planning and knowledge of conditions predict success through the learning process. The results encourage teachers to support students in improving their metacognitive awareness, i.e. expect them to set goals for their own learning.

Yi Tian,Yu Fang,Jian Li (2018) investigated whether the relationship between metacognitive knowledge (MK) and mathematics performance can be mediated by self-efficacy and motivation in the title “The effect of metacognitive knowledge on mathematics performance in self-regulated learning framework-Multiple mediation of self-efficacy and motivation”. The sample comprised 569 students (245 male, Mage = 16.39, SD = 0.63) of Grade 10 in China. The MK in mathematics questionnaire, the self-efficacy questionnaire, the academic motivation scale, Raven advanced progressive matrix, and mathematics tests were used for data collection. The findings highlight the psychological mechanism in the mathematics of Chinese students and will help teachers to improve students’ mathematical learning in SRL framework more effectively.

In the study titled “Study Habits and Achievement Motivation; A Comparative Study among Arts and Science Students “conducted by Rose Ann Paulson, Dr. Soumya Starlet C.T (2018) published in the journal International Journal of Science and Research (IJSR),90 students from higher secondary schools in Thrissur district, consisting of 45 arts students and 45 science students, with an age range of 15-18 years old were taken as the sample. Study habits inventory and achievement motive scale was used for data collection. Descriptive analysis was used and Student's t-test, Pearson's correlation coefficient was used. The paper explores the relationship between study habits and achievement motivation among higher secondary school students in Thrissur district. It was inferred from the results that Study habits show significant relationship with achievement motivation. The study shows significant difference among comprehension, concentration, task orientation and study sets (sub scales of study habit) which shows that the science students are high in the above-mentioned sub scales compared to arts students. There is high correlation between comprehension and achievement motivation, and a moderate positive correlation with study sets.

Clara R.P.Ajisuksmo ,Grace R.Saputri (2017) investigate the influence of attitudes towards mathematics and metacognitive awareness on mathematics achievement of high school students in the title “The influence of attitude towards mathematics and metacognitive awareness on mathematics achievement”. The sample of the study were 103 students of a senior high school in Tangerang, Indonesia. Towards Mathematics Inventory (ATMI) was used to measure students’ attitudes towards mathematics, and Metacognitive Awareness Inventory (MAI) was used to measure metacognitive ability, whereas mathematics achievement was measured from the value obtained in the school report cards of the semester when the research was being conducted. The results revealed that attitudes towards mathematics and students’ mathematics achievement were significantly correlated. No significant correlations were shown between metacognitive skills and mathematics achievement as well as between attitude towards mathematics and metacognitive skills. The regression model was fit in predicting the contribution of attitudes towards mathematics and metacognitive skills on mathematical achievement for 25.5%. However, looking at the p value of the t test it was shown that the attitude towards mathematics contributes to the model, but not the metacognitive skills. No significant difference was found on mathematics achievement.

Mahwisha Rabia, Naima Mubarak, Hira Tallat, Wajiha Nasir (2017) examined the association between study habits and academic performance of students in the title “A study on study habit and Academic performance of students”. Sample of 270 students were taken from two colleges Govt. Allama Iqbal College for Women, Sialkot and Govt. Technical College for boys, Sialkot. They used Univariate descriptive and chi square test for testing relationship between variables. The results showed that There is a significant relationship between study habits and academic performance of the students.

In a study titled “a study of academic achievement among high school students in relation to their study habits “conducted by Anju Verma (2016) published in the journal ‘International Journal of Research in Humanities, Arts and Literature’, the sample consisted of high school students from 4 government and 4 private schools. Study habit inventory and t test was used to see the differences between groups. Main finding of the research is that developing good study habits in school is crucial for successful completion of assignments and learning materials, playing a significant role in acquiring knowledge and developing a positive attitude towards achieving success in various fields. Study habits formed during school years have a lasting impact on academic achievement and overall learning outcomes. The results of the study showed that developing good study habits is essential for academic success and personal growth.

In a study titled “A Study on the Metacognitive Awareness of Secondary School Students”, conducted by Sajna Jaleel Premachandran. P (2016), published in the journal Universal Journal of Educational Research, the paper discussed the concept of metacognition, its importance in learning and development, and the analysis of metacognitive awareness in secondary school students to identify potential differences based on gender, locality, and type of school management. The sample consists of 180 secondary school students from various schools of Kottayam district. Metacognitive awareness inventory and basic statistical techniques such as arithmetic mean median and standard deviation along with chi square test was used. The results inferred that there is no significant difference in the metacognitive awareness of secondary school students based on their locale, gender and type of management of school.

Ihdi Amin and Prof. Y.L. Sukestriyarno, Ph.D. (2015) study titled Analysis meta cognitive skills on learning mathematics in high school. This study uses a mix method (qualitative-quantitative. Subject used in this study were XII students of Kersana Brebes Public Senior High School. The results showed that the ability of the students regarding the metacognitive awareness is more dominant in the high and medium criteria, while the average ability in metacognitive awareness in the category of being. There is a positive linear relationship between metacognitive awareness and cognitive skills. There is a positive linear relationship between metacognitive awareness and metacognitive skills; and there is a positive correlation between the variables of cognitive skills and metacognitive skills with sufficient criteria/ medium.

In the study titled "Investigation of Relationship between Study Habits and Achievement Motivation of College Students "conducted by Dr. Indrajitsinh, D. Thakor (2015) published in "The International Journal of Indian Psychology", college students from Halol city in Gujarat state, with a random sample of 111 students were used. Study Habits and Attitudes Inventory and academic motivation inventory was used. Product-moment coefficient of correlation method and t-test was used for analysis. The paper explores the relationship between study habits and achievement motivation among college students, finding a positive correlation and no gender sensitivity, with high-achieving students in study habits also achieving high results in achievement.

In the study titled" Metacognitive Awareness of Undergraduate Students in Relation to their Academic Achievement" conducted by Dr. Neena Sawhney and Dr. Sneh Bansal (2015), published in the journal The International Journal of Indian Psychology, Undergraduate students (100 students, both boys and girls) from various colleges in Chandigarh were taken as sample. The methodology used in the study involved a descriptive survey method. The paper discusses the relationship between metacognitive awareness and

academic performance among undergraduate students in Chandigarh colleges. The results indicate that Metacognition is crucial for academic success, with a significant positive relationship existing between academic performance and metacognitive awareness It was inferred from the study that Learning cognitive and metacognitive strategies offers students the tools to drive their brains.

In a study titled "The development of metacognitive ability in adolescence "conducted by Leonora G. Weil, Stephen M. Fleming, Iroise Dumontheil, Emma J. Kilford, Rimona S. Weil, Geraint Rees, Raymond J. Dolan and Sarah-Jayne Blakemore (2013), published in the journal Elsevier,28 healthy adults and 28 healthy adolescents were taken as the sample. The tools for data collection in this study included a computer-based task adapted from a previous study, MATLAB programming for stimulus display and responses, a staircase procedure to maintain performance levels, and the use of confidence ratings to measure metacognitive ability. The paper investigates the development of metacognition between 11 and 41 years, showing improvement in metacognition between 11 and 17 despite stable task performance, indicating a prolonged developmental trajectory during adolescence. It was inferred that Metacognitive ability for performance during a perceptual task improves during adolescence and stabilises in adulthood.

Marie jean N.Mendazabal (2013)study titled "Study Habits and Attitudes: The Road to Academic Success". A descriptive correlational research design was used for this study to examine the relationship of students' study habits and attitudes to their performance in the licensure examinations. The participants were graduates in school year 2009-2010 from the different programs of the University which require licensure examination. Results of the study showed that the participants do not have favourable study habits and attitudes. Among the noted unfavourable study habits were inefficient time management, lack of planning and concentration in their studies, poor skills in reading, ineffective test taking techniques, and

failure to inform their teachers of their difficulties with school work and ask for their help. The participants also demonstrated unfavourable attitudes toward teachers' classroom behaviour and methods. It was further revealed that their performance in licensure examinations was quite low.

Shabir Ahamed Rana and Rukhsana Kausar (2011) conducted to compare Pakistani British and White British students on study habits and their academic performance in the title Comparison of study habits and Academic performance of Pakistan British and White British students .t test was carried out for the comparison of two variables. The sample comprised of 200 science students of 10th class recruited from four multiethnic schools of England, UK. Statistical analysis revealed that although white British students had significantly better study habits than Pakistani British but no significant differences was found in their academic performance. Country of origin and school had significant interactive effects on study habits of students but did not have an interactive effect on academic performance of the students.

Gokhan Ozsoy, Aysel Memis, Turan Temur (2009) did a study titled "Metacognition, study habits and attitudes". Participants of the study consist of 221 students, 125 female and 96 males, enrolling to six public primary schools in Turkey. Pearson r correlation coefficients were used. The results revealed that there is a medium positive relationship between metacognitive knowledge and skills and study habits, study attitudes and study. Additionally, the results of the study showed that there is no significant relationship between metacognition and study habits and attitudes for low and medium achievers but, there is a significant relationship for high achievers.

CHAPTER-III

METHODS

Aim

The aim of the study is to examine the relationship between metacognitive knowledge and study habits between Achiever and Non-Achievers.

Objectives

The objectives of the study:

- To find out the relationship between metacognitive knowledge and study habits in college students.
- To find out the differences in metacognitive knowledge and study habits among Achievers and Non-Achievers.

Hypotheses

H1: There is a relationship between metacognitive knowledge and study habits.

H2: There is a significant difference in metacognitive knowledge and study habits between Achievers and Non-Achievers.

Operational Definition of Variable

According to Flavell (1979), Meta cognition is often referred to as “thinking about thinking”. Metacognition is a regulatory system that helps a person understand and control his or her own cognitive performance. Metacognition allows people to take charge of their own learning. Metacognitive knowledge is what individuals know about themselves and others as cognitive processes.

Study habits refer to the methods and practices that students regularly apply in their academic tasks. Clarke et al. (2021) and Gilavan & Emad (2021) agree that these habits,

which include time management, study space, organisation, and learning strategies, are fundamental to improving academic performance.

Sample and Sample Size

A sample of 150 college students of age between 18 to 22 were taken for the study.

Sampling Design

Convenient sample was used to select the sample. This sampling method is often used to select participants based on their proximity, availability, or willingness to participate, rather than through random selection.

Inclusion Criteria

- Students who are within the age range of 18-22.

Exclusion Criteria

- Students of first year degree was excluded.

Tools for Data Collection

The Metacognitive Awareness Inventory (MAI) is a tool used to assess an individual's awareness and understanding of their own cognitive processes. Questionnaire is a standardised instrument launched in 2016 by Sajna Jaleel, Premachandran.P. There are 30 items in MAI with the 5-point Likert scale. (1-strongly agree to 5-Strongly disagree)

Study habit checklist (SHC) is used to study the individual's study habit. It consists of 44 items with 5-point Likert scale. (1-Almost never, 2-less than half the time, 3-About half the time, 4-More than half the time, 5-Almost always). The constraints included in this questionnaire are time management, previewing, reading, reading review, remembering, in class, writing paper, preparing for examinations, taking examinations, physical setting.

Procedure

The data in the present study was collected by giving questionnaires. First task of the researcher was to differentiate Achievers and Non-Achievers. For that the SCPA of their recent semesters were taken. SCPA of semester 3 was taken for second years and SCPA of semester 5 was taken for third years. Students with SCPA 8 or above were taken as Achievers and Students with SCPA below 8 were taken as non-achievers in the study. There were 69 Achievers and 81 Non-Achievers. At the beginning of the survey a consent form was given to ensure the confidentiality of the participant followed by the distribution of metacognitive awareness inventory and study checklist. These questionnaires were circulated among 5 colleges. After data collection, the data was exported to excel sheet for further analysis. Through SPSS software version 29.0.2.0 ,the Kolmogorov Smirnov test, Pearson correlation, regression analysis and independent sample t test were used as statistical tool for analysis.

Ethical Consideration

• Research participants was not subjected to harm in any ways whatsoever.

• Respect for the dignity of research participants was prioritised.

• Full consent was obtained from the participants prior to the study.

• The protection of the privacy of research participants was ensured.

• Adequate level of confidentiality of the research data was ensured.

• Anonymity of individuals and organisations participating in the research was ensured.

• Any deception or exaggeration about the aims and objectives of the research was avoided.

• Any type of communication in relation to the research was done with honesty and transparency.

• Any type of misleading information, as well as representation of primary data findings in a biased way were avoided.

Statistical Analysis Technique

SPSS or Statistical Package for the Social Sciences was used for the research's data analysis. Normality test (Kolmogorov-Smirnov correlation) and independent sample t test are the techniques that are measured by SPSS version number 29.0.2.0. The data analysis technique of correlation was used in the present study. A correlation is a statistical measurement of the relationship between two variables. Independent sample t test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. The variable that is to be predicted is known as the dependent variable and the variable that is used to predict is known as the independent variable.

Normality Testing

Table 1

Test for normality-Kolmogorov-Smirnov test

	Sig
Metacognitive knowledge	.200
Study Habit	.200

Level of significance 0.05

Table 1 shows the result of Kolmogorov-Smirnov-test for normality of metacognitive knowledge and study habit with sample size 150. The level of significance of metacognitive knowledge and study habit is. 200.Since p value of metacognitive knowledge and study habit

is greater than the level of significant (α=0.05), it can be interpreted that, the data is normally distributed.

CHAPTER-IV

RESULT AND DISCUSSION

The analysis of data collected from a sample of 150 participants was done. In this research, the main objective was to find the relationship between metacognitive knowledge and study habits and to analyse whether there is any significant difference in metacognitive knowledge and study habits between Achievers and Non-Achievers.

Table 2

Descriptive statistics

Mean and standard deviation of metacognitive knowledge and study habits.

	N	Mean	Std. Deviation
Metacognitive knowledge	150	68.90	11.29
Study habits	150	137.38	21.00

From Table 2, the mean is the average value of the data set, calculated by summing all values and dividing by the total number of observations. It represents the central tendency of the data. The SD represents the standard deviation. N represents the sample size. The mean and standard deviation of metacognitive knowledge was found to be 68.90 and 137.38, and the mean and standard deviation of study habits was found to be 11.29 and 21.00, respectively. The N value (number of participants) for metacognitive knowledge and study habits is 150.

H1: There is a relationship between metacognitive knowledge and study habit.

Table 3

Correlation between metacognitive knowledge and study habit.

	Study habits
Metacognitive knowledge	-.502

**Correlation is significant at 0.01level (2-tailed)

Table 2 shows the result of correlation between metacognitive knowledge and study habit. The Pearson correlation coefficient is found to be -0.502 at the level of significance 0.01. Since the p value (<0.001) is less than the level of significant (α=0.01), the data is statistically significant. Therefore, it can be concluded that there is a moderate negative correlation between metacognitive knowledge and study habits. Hence H1 failed to reject.

A study conducted by Aysel Memis, Turan Temur (2009) revealed that there is a moderate positive relationship between metacognitive knowledge and study habits and the results of the study showed that there is no significant relationship between metacognition and study habits and attitudes for low and medium Achiever's but there is a significant relationship for high Achievers.

Table 4

Regression analysis of the dimensions metacognitive knowledge and study habit.

Model	R	R Square	Adjusted R Square	Std. Error of estimate
1	-.502	.252	.247	.41424

Table 4 shows the regression analysis of metacognitive knowledge and study habits. From the above table it can be inferred that there exists a moderate negative correlation

between metacognitive knowledge and study habits. The R square value is.252, which indicates that 25.2% total variation in the study habits can be explained by metacognitive knowledge. Since the p value (,0.001) is less than level of significant (α=0.01) it can be concluded that the study is statistically significant.

H2: There is a significant difference in metacognitive knowledge and study habits between Achievers and Non-Achievers.

Table 5

The result of independent t test comparing metacognitive knowledge and study habit of Achievers and on Non-Achievers.

parameter	Achievers		Non-Achievers		t	*p*
	M	SD	M	SD		
Metacognitive knowledge	2.2570	.3467	2.3315	.3979	-1.225	.244
Study habits	3.1877	.4465	3.066	.4978	-1.575	.434

The above table 5 shows the results of the t-test (one-tailed), conducted to assess whether achievers differed significantly from non-achievers in metacognitive knowledge and study habit. Since the p value of metacognitive knowledge and study habits (0.244,0.434) is greater than level of significance (α=0.05) it can be concluded that there is no significant difference in metacognitive knowledge and study habits between Achievers and Non-Achievers. Hence H2 is rejected.

CHAPTER-V

CONCLUSION

Conclusion

The study examined the relationship between metacognitive knowledge and study habit between Achievers and Non-Achievers among college students. Pearson correlation and independent sample t tests was used to unravel the relationship between metacognitive knowledge and study habits. The correlation analysis revealed a moderate negative correlation between metacognitive knowledge and study habits, which was statistically significant, indicating that as metacognitive knowledge increases, study habits tend to decrease slightly and vice versa. Moreover, the independent sample t tests shed light on differences in metacognitive knowledge and study habits between achievers and non-achievers. The test results showed no significant difference in metacognitive knowledge and study habits between Achievers and Non- Achievers.

Findings

- There is a moderate negative correlation between metacognitive knowledge and study habits.
- There is no significant difference in metacognitive knowledge between achievers and non-achievers.
- There is no significant difference in study habits between achievers and non-achievers.

Limitations

- Sample Size: The sample size taken for the study was low.
- Contextual Factors: The study may not account for contextual factors such as socio-economic background, cultural differences, or institutional support systems, which could influence both metacognitive knowledge and study habits.

- Confounding Variables: There could be other variables that influence study habits such as motivation, time management, perseverance etc.

Implications

The study, despite its limitations, gives a good opportunity for future studies.

- The findings of this research may benefit future studies investigating potential underlying factors contributing to the moderate negative correlation between metacognitive knowledge and study habits.
- Examining longitudinal effects to see how these relationships evolve over time could provide deeper insights into the dynamics between metacognitive knowledge and study habits in different academic contexts.
- Future research can also aim to include an equal number of male and female participants to ensure a more comprehensive understanding of the relationship between achievers and non-achievers among college students.

In summary, the study revealed a moderate negative correlation between metacognitive knowledge and study habits among college students, indicating that as metacognitive knowledge increases, study habits tend to decrease slightly, and vice versa. However, no significant differences were found in metacognitive knowledge and study habits between Achievers and Non-Achievers. Hence, this study opens the door for future research that can assess other factors that can potentially influence study habits.

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APPENDICES

Appendix A

Informed consent

The study is about the relationship between Metacognitive knowledge and study habit among college students. Your participation in this survey is completely voluntary and there are no foreseeable risks associated with this project. Kindly be rest assured that all information collected would be used for academic purposes only and will remain strictly confidential. Please feel free to answer questions honestly and openly as your responses will be kept anonymous.

Thank you for your participation!

Appendix B

Metacognitive Awareness Inventory (MAI)

Name of the Student……...

Age of the Student.…….

The following statements are related to your learning techniques and about your learning ability. Think for a minute and respond to the statements. The responses should be as precise as possible. There are no discrimination as right or wrong responses. If you are strongly agreeing with a statement, then put a tick (α) mark corresponding to the column for strongly agree. Similarly put the tick marks in the columns for agree, not decided, disagree and strongly disagree according to your choice.

1.When confronting with a problem, I often compare it with the problems

which I have previously solved.

2.When learning a new content, I compare it with the previously learned things.

3.I choose different learning methods according to the learning area.

4.I usually follows a strict time table for the studies.

5.Whenever taking a decision, I think at least twice about it.

6.I often tries to complete my assignments and learning activities within the

time schedule.

7.After learning, I try to revise the central ideas in the content.

8.Always try to discuss and solve the doubts related to the learning area with

my teachers and friends.

9.Start learning only after getting a clear picture about the content to be learned.

10.When confronting with a problem situation, I always thinks about alternate ways for solving it.

11.I always accept the innovative changes occurring in the society.

12.As a student, I always critically analyze the ability of myself in learning activities.

13.Always try to improve myself.

14.I have the ability to completely concentrate on my learning activities in spite of all the disturbing situations.

15.Before starting the study, I collect all the relevant and recent information about the content.

16.After the successful completion of each learning task, my self confidence increases.

17.I always ask myself as whether I have gone for all other possibilities before selecting a final solution.

18.I find happiness in collecting information about interesting learning areas.

19.I am efficient in finding and rectifying my own weaknesses.

20.I split the learning task into simple units.

21.I evaluate the ability of myself as a student in solving the learning tasks.

22.I change the speed and time of learning according to the learning contents.

23.Whenever doing a task, I completely engage in it.

24.I regularly assess my learning efforts as whether I am going in the right way or not.

25.I control my emotions and wishes as they will hinder me from reaching the learning goal.

26.After completing a learning task, I always ask myself as is there any other ways for solving the same task.

27.I try to do the allotted learning tasks as successful as possible by me.

28.I likes to collect meaningful and important information.

29. Before beginning a learning activity I always try to read the instructions carefully

30.I consider my failures as mile stones towards success.

Appendix C

Study Habit Checklist

Answer each of the following questions on a scale from 1 to 5 with 1 being almost never and 5 being almost always.

1.Almost Never

2.Less than Half the Time

3.About Half the Time

4.More than Half the Time

5.Almost Always

Time Management

1.Do you keep up to date in your text reading and other assignments?

2.Do you have a study schedule plan in which you set aside time each day for studying and reviewing?

3.Do you schedule manageable study periods and frequent periods for review, interspersing 50-minutes of studying with 10-minute breaks?

Previewing

4.Do you read over the Table of Contents of a book before you being studying the book?

5.Before studying the book, do you take 10 minutes to thumb through the whole book to check for the presence of study aids such as glossaries, summaries, outlines, italicized or bold-faced words, and charts?

6.Before each reading assignment, do you take 10-15 minutes to preview the chapter (familiarizing yourself with charts, illustrations, key words, summaries, etc.)?

7.Do you write down questions based on the preview so that you approach your reading and class with an active inquiring mind?

Reading

8.Do you look up or find the meaning of important new words and key terms?

9.As you read an assignment, do you turn section headings into questions that you are actually trying to answer?

10.Do you find the main idea of each paragraph or section and repeat is aloud to yourself?

11.Do you read one section of a chapter at a time rather than reading straight through the entire chapter?

12.Do you seek out other reading materials in addition to assigned textbook sections if you need to strengthen your understanding?

Reading Review

13.Do you utilize review questions or summaries at the end of a chapter to test your recall of what you've read?

14.Do you write key terms and definitions on 3x5 notecards or notebook paper?

Remembering

15.Do you display an interest or enthusiasm for a course to people around you (fellow students, instructor, etc.)?

16.If you do not understand a concept, do you ask the instructor?

17.When studying material to be remembered, do you try to summarize it or put it into your own words?

18.Do you distribute the study of a lengthy assignment over several study sessions (less than an hour each)?

19.Do you deliberately relate new or unfamiliar material to things that you already know?

20.When studying information to be memorized, do you practice or review over many short sessions?

In Class

21.Do you always take class notes?

22.Do you ask questions or initiate comments in each class?

23.During class, do you try to compare or relate ideas being presented in class to ideas from the textbook?

24.Do you approach each class with questions from your readings or preview?

25.Do you review and edit your class notes within 24 hours?

26.Do you write down possible test questions while reviewing your class notes?

27.Do you review all your notes weekly?

Writing Papers

28.Before starting to write a paper, do you collect information and ideas from other people or outside readings?

29.Before writing a paper, do you make an outline OR list ideas and then organize them into a meaningful order?

30.In writing a paper, do you clearly indicate the main ideas of the paper as well as each paragraph?

31.In writing a paper, do you write a first draft, edit and rewrite the paper at least once?

Preparing for Examinations

32.In studying for an examination, do you distribute your studying over at least 3 or 4 one-hour sessions?

33.As you review, do you relate class notes to textbook notes to reinforce the main ideas?

34.Do you create memory devices, such as acronyms, to help you remember lists of terms, etc.?

35.Do you make up examination questions that you think will be asked and then find the answers?

36.Do you get a normal amount of sleep the night before an exam so that you are well-rested and alert?

Taking Examinations

37.When taking an exam, do you first carefully read each section's directions and look through the entire test?

38.Before beginning the test, do you make plans for distributing your time among the questions?

39.In taking an essay examination, do you quickly outline your answer before you start to write?

40.At the end of an examination, do you proofread or check your answers?

41.In taking multiple-choice, matching, and true-false tests, are you aware of good strategies in finding answers?

Physical Setting

42.Do you study in a quiet place – one that is free from noisy disturbances?

43.Do you study by yourself before studying with others?

44.Do you have a special chair and location to study – separate from relaxation or sleeping furniture?