

Relationship Between Metacognition And Academic Success

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ABSTRACT

INTRODUCTION

Various researches have been done linking metacognition and academic success. The study is conducted on as a sample of 120 students doing under - graduation drawn from students of different colleges of Delhi (NCR). This study examined the relationship between metacognition and academic success among college students.

METHODS

The current study aimed to examine whether and how metacognition influenced academic success of college students. The metacognition inventory was used which was developed by Punit Govil was used to measure metacognition of students. It was hypothesized that there will be a significant relationship between the two variables, i.e., Metacognition and Academic success in males and females. Pearson correlation and t-test were employed to statistically analyse the relationship and difference between variables.

RESULT & CONCLUSION

It can be concluded that has a significant impact on metacognition has some impact on academic scores of the students. The research can help create awareness about metacognition for students. It can also help make this a practice adopted by individuals in educational settings as well as can be used for accelerating personal growth.

Keywords: Metacognition, Academic Success and college students

Metacognition is defined as a person's knowledge of one's own cognition. The term metacognition was first coined by John H. Flavell in 1979. Understanding and regulating one's own cognitive process that involves thinking about and reflecting upon one's own thoughts, knowledge and cognitive abilities as explained by David Perkins (1981). Therefore, metacognition involves being aware of what you know and don't know, recognizing when you are doing well or when you are struggling with a task and knowing what strategies or techniques works best for you.

As per numerous psychologists, for example, Sternberg (1985) the student needs metacognition abilities, in addition to cognitive components, to manage and monitor problem solving process. These skills assist the student with defining and distinguish the problem, choose right strategy, and organize the thinking process and the tasks of the solutions (Davidson & Sternberg, 1998).

Academic Success can be put in various ways, but mostly, it is said to be related to achievements which are related to educational goals and result within academic context. Successful students develop study habits and learning strategies that help them improve, retain and apply information. They are good at time management, organization, note taking and self-testing. According to Schraw and Moshman (1995) teaching metacognitive strategies like self-monitoring and self - regulation will improve in students' learning outcomes. In 2002 Zimmerman found that student who posses strong metacognitive skills are more likely to get involved in self-learning behaviour which leads them to greater academic success.

Aim:

To study the relationship between metacognition, problem-solving academic success among college students.

Objectives:

1. To study the difference in the level of metacognition among males and females of college students.
2. To study the difference in the level of academic success among males and females of college students.
3. To study relationship between metacognition and academic success of college students.

Hypotheses:

- H1: There would be a significant difference in metacognition of males and females of college students.
 H2: There would be a significant difference in the level of academic success among males and females of college students.
 H3: There would be a significant relationship between metacognition and academic success of college students.

Sample:

The representative sample consisted of 120 college students from different colleges of Delhi/NCR through purposive sampling. In which the sample was divided into 60 high achievers into 30 males and 30 females and further 60 low achievers into 30 males and 30 females. Students' age varied from 18 to 24 years.

Tools description:

Metacognition Inventory (College Students) – (MIC) The metacognition inventory was developed by Punit Govil. It was published in 2003 and consists of 30 items, each item being a statement followed by four-point scale from (1) being not at all, (2) being somewhat, (3) being to considerable extent and (4) being very much so. It comprised of 2 set domains: knowledge of cognition and regulation of cognition. The Cronbach alpha coefficient reliability was 0.84 and Test- retest method reliability coefficient was found to be 0.82.

Academic Success – Data collection- Academic success is measured by grades of a student in this research researcher will check grades of students from last semester. Ensuring that researcher has accurate and complete data for all students.

Procedure:

The undergraduate students of colleges were approached in-person with the preliminary details of the study. The students agreed to participate and volunteer for filling up the tool: Metacognition Inventory (MIC) and Academic Success of students was checked. Before the tool was distributed to the participants for completion, the researcher briefly explained the objectives of the study and had an informal dialogue with them which helped to establish a good rapport with the participants. Participants were told that their details will be kept confidential.

The data were collected over 10 visits from the students of different colleges in Delhi/NCR and it took around 15-20 minutes for each volunteer to fill up the questionnaire. The tool was not shared via electronic medium for completion as it is paper-and-pencil test participants felt more ease to give their response.

Method of Data Analysis:

To address the Research question of this study, SPSS 25.0 was used to conduct various tests. First Pearson correlation was conducted to observe the inter- relationship among the variables for both male and female population. Secondly, t-test was used to examine the difference between male and female population. Further, to measure the impact of metacognition on academic success Regression was used.

RESULT

The research studies and compares the level of metacognition and Academic Success among college students. A population size 120 male and female students, selected via random sampling, participated in the study. SPSS 25.0 was used to calculate Pearson Correlation and T- test. The results are tabulated and interpreted as below.

TABLE 1 Mean And S.D**TABLE 1a Summary of Mean and SD of Scores Metacognition**

Gender	N	Mean	Std. Deviation	Coefficient of variation (C.V)
Male	60	84.6333	11.95750	7
Female	60	87.5000	12.70860	6

The above table shows that the population of 120 people that has been selected and the Mean and SD scores of *Metacognitions* is calculated. It shows that female students have scored better on average and they have high C.V which means that females are less consistent in comparison to males.

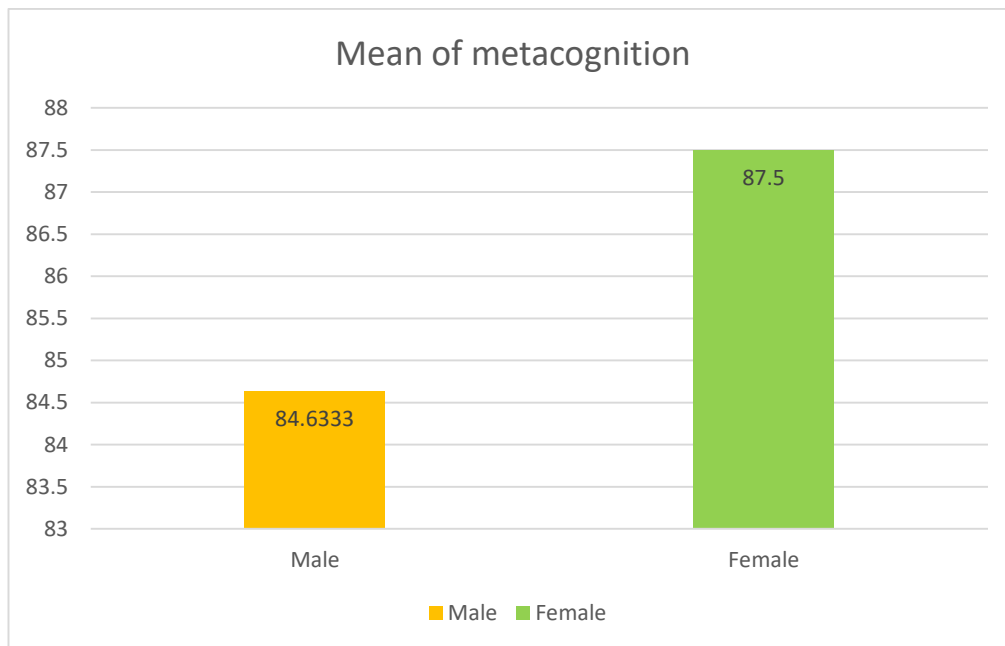


Fig:1.1

TABLE 1b Summary of Mean and SD of Scores Academic Success

Gender	N	Mean	Std. Deviation	Coefficient of variation (C.V)
Male	60	83.4545	11.93935	7
Female	60	86.9200	12.45090	6

The above table shows that the population of 120 people that has been selected and the Mean and SD scores of *Academic Success* is calculated. It shows that female students have scored better on average and they have high C.V which means that females are less consistent in comparison to males.

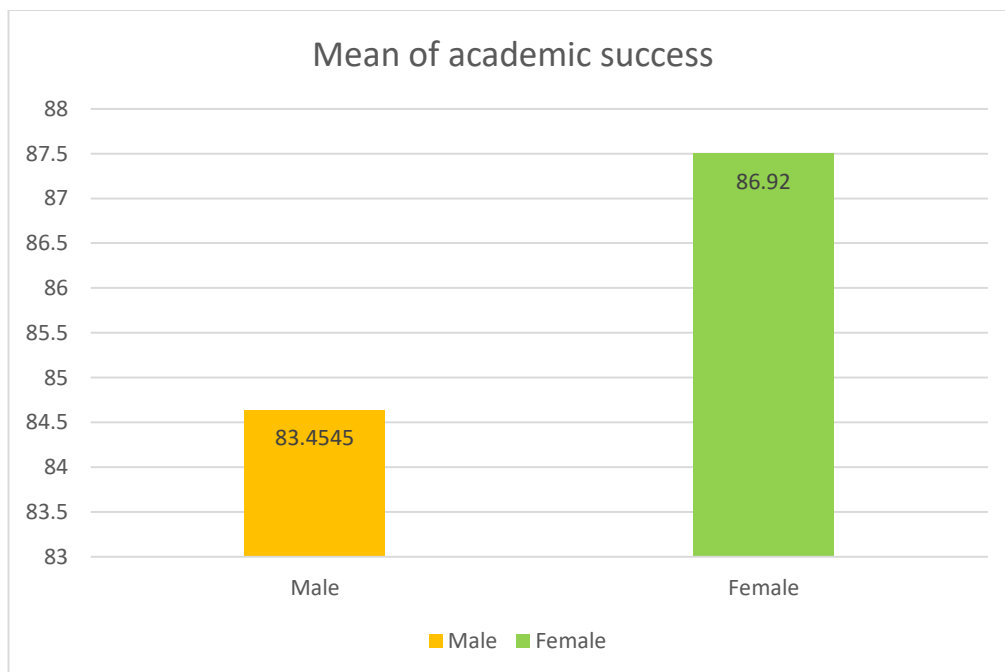


Fig:1.2

TABLE 2 (a) T-test Result Comparing the Level of Metacognition among Males and Females

Metacognition	Mean	S.D	t-scores	Df	Sig.
Males	84.6333	11.9575	-1.273	118	0.206
Females	87.5	12.7086	-1.273	118	0.206

The data shows t-test between males and females on comparing the level of metacognition. The results in the above table shows that there is an insignificant difference between level of metacognition among males and females.

(a) T-test Result Comparing the Level of Academic Success among Males and Females

Academic Success	Mean	S.D	t-scores	Df	Sig.
Males	83.4545	11.9575	-0.202	238	0.209
Females	86.92	12.4509	-0.202	238	0.209

The data shows t-test between males and females on comparing the level of academic success. The results in the above table shows that there is an insignificant difference between level of academic success among males and females.

TABLE 3 Overall correlation between metacognition and Academic Success

	N	PEARSON CORRELATION METACOGNITION	PEARSON CORRELATION AS
METACOGNITION	120	1	0.1772713
Academic Success	120	0.1772713	1

**Correlation is significant at the 0.05 level (2-tailed).

The above table shows the correlation between the variables of the study. A Pearson correlation was calculated Metacognition and Academic Success. There is a significant relationship between metacognition and Academic Success.

The result showed that $r = 0.177, p < 0.05$. It indicates that if metacognition increases then Academic Success will also increase.

DISCUSSION AND CONCLUSION

This study is aimed at studying and comparing metacognition and academic success among male and female college going students. A relationship between metacognition and academic success is studied among male and female population in this research , along with a difference in levels of metacognition and academic in males and females.

T-test has been used to find the difference between the level of metacognition among males and females. The results obtained from the t-test (-1.273) is showing that there is an insignificant difference between level of metacognition among males and females. This means person has metacognition skills awareness. There is also an insignificant difference between level of academic success among males and females which is (-0.202). This also academic success of person matters in a person overall welling and personality. The result for Pearson correlation shows that the correlation between the metacognition and academic success are significant to each other. This means that metacognition and academic success are related to each other and there is a positive correlation between them.

Therefore, it can be said that hypothesis 3 is proven to be correct. Hypothesis 3: there would be a significant relationship between metacognition and academic success. Naful et al. (2017) conducted a study to look whether there was a relationship between metacognitive awareness on students’ achievement. Moreover, the researchers researched that there were contrasts in metacognition awareness in student’s achievement. with connection to gender and discipline of study. The results showed that there was a significant relationship between metacognition awareness on students’ achievement.

CONCLUSION

The important finding in this research study suggests insignificant negative relationship between metacognition and academic success. This is true for both male and female going students. No significant difference exists between male and female students in Metacognition. No significant difference exists between male and female students in Academic success. Hypotheses 1& 2 are rejected, and 3 is is proven in this study. Thus, it can be said that an increased level of metacognition can help in academic success in. both male and female college going students. It can also be said both male and female have similar levels of metacognition but vary in terms of academic success.

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Appendix A: List of Tables

Table 1. –Descriptive Statistics: Mean

Table 1(a) Summary of Mean and SD of Scores Metacognition

Table 1(b) Summary of Mean and SD of Scores Academic success

Table 2. - T-test Result

Table 2 (a) Comparing the Level of Metacognition among Males and Females

Table 2 (b) Comparing the Level of Academic Success among Males and Females

Table 3. - Overall correlation between metacognition and Academic Success

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Figure 1.1- Descriptive Statistics: Mean of metacognition of males and females

Figure 1.2- Descriptive Statistics: Mean of Academic Success of males and females