Metacognition among College Students

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Abstract

Metacognition is one of the recent concepts of Cognitive Psychology. The word metacognition refers self-knowledge about different cognitive capacities of a person. Such as knowledge of his/her memory, intelligence, habits etc. The aim of this study is to know the level of metacognition among male and female college students and to know the effect of level of class (Under Graduate and Post Graduate) and stream of education (Science and Social Science) on metacognition. 80 college students were selected by stratified random sampling method from Ranchi. Stratification was based on gender, level of class and stream of education. 10 students were selected for each sub-group. Samples were administered personal Data Questionnaire and Meta-Cognition Inventory. Then data was change into tables. After analysis of data it was found that female students have higher level of metacognition in comparison to male students. It was also found that Post Graduate students have higher level of metacognition than Under Graduate students. In this study it has been also found that stream of education do not affect the level of metacognition.

Keywords- Metacognition, College students

Introduction

Metacognition is a recent origin word in the field of Cognitive Psychology. It is the combination of two words – Meta and Cognition. Meta means beyond and Cognition refers the process of getting environmental information through sense organs. Thus, metacognition means self knowledge of cognitive processes. There are two facets of metacognition. The first facet is- information of cognition and second facet is- regulation of cognition. Information of cognition means knowledge about thinking, memory, intelligence, leaning etc. Regulation of cognition means how these cognitive factors work. In other words, cognitive regulation refers to the process of mental abilities.

The main purpose of this research is to know the level of metacognition in college students. College students are more conscious towards their mental activities in comparison to school going children. Most of researches were executed and channelized in a proper way to found that girls were prone to more metacognitive in comparison to boys.

Pajeres and valiante (2002) found that girls showed higher metacognition ability than boys.

Ponkay and Blumenfeld (2012) coded that females had more ability to use metacognitive strategies in comparison to males.

Nongtodu & Bhutia (2017) found that lots of students have average level of metacognition. Gender does not affect the level of metacognition. They also found that science students have higher metacognition in comparison to arts students.

Panda (2017) found that girls had better metacognition knowledge than boy but boys had better metacognitive regulation than girls. He also found that progress of metacognitive awareness were very slow in college students during long span of 10 years.

Objective

- ➢ To measure the level of metacognition among respondents.
- ➢ To know the impact of gender, stream of education and level of class on metacognition.

Hypothesis

- ➢ The level of metacognition would be different among respondents.

- ➢ Gender, stream of education and level of class would significantly influence the level of metacognition.

Methodology

Sample

80 college students including equal number of male and female were selected by Stratified Random Sampling method from Dr. Shyama Prasad Mukherjee University, Ranchi. The stratification was based on gender, class and stream of education.

Design

Group	Science		Social science		Total
	Under Graduate	Post Graduate	Under Graduate	Post Graduate	
Male	10	10	10	10	40
Female	10	10	10	10	40
Total	20	20	20	20	80

Dependent Variable – Metacognition

Independent Variable –Gender, stream of education, level of class

Inclusion criteria - Mentally and physically healthy male and female college students, 20-23 years age group range of students, Only Under Graduate and Post Graduate students, students belonging to Science and Social Science stream.

Exclusion criteria –Unhealthy male and female college students, below 20 and above 23 age group range of students, Intermediate students and students of Commerce stream.

Tools

- **Personal Data Questionnaire (PDQ)** – A short PDQ was used to get essential information about the samples. Such as Age, Stream of education etc.

- **Metacognition Inventory (MCI) -** This scale was developed by Dr. Punita Govil. It was used to know the level of metacognition of college students. There are 30 items in this scale. The cronbach alpha reliability of this scale is 0.85 and has satisfactory content validity. High score indicates higher level of metacognition and low scores indicates low level of metacognition. It takes approximately 16-20 minutes to complete.

Procedure

Data was collected in a class room according to the sample design. After establishing workable rapport samples were administered PDQ and then after Metacognition inventory. Individual's total score has been calculated and data was changed into tables. Percentage and t-test were applied for treatment of data.

Results

Table- 1

Percentage of metacognition among male and female college students

Group	High		Average		Low	
	N	**%**	**N**	**%**	**N**	**%**
Male	1	1.25	16	20	23	28.75
Female	4	5	22	27.5	14	17.5

Figure- 1 (Pie-chart)   **Figure -2 (Pie-chart)**

Percentage of males

Percentage of females
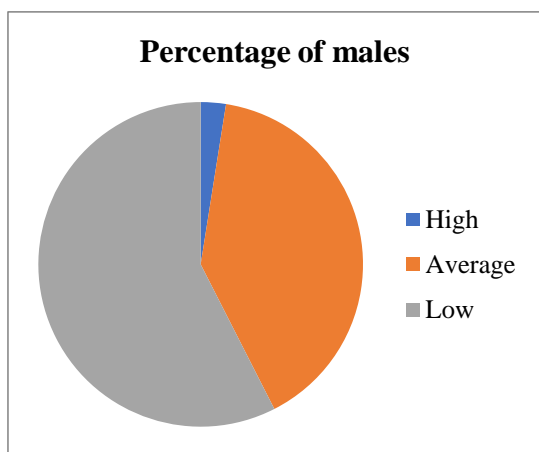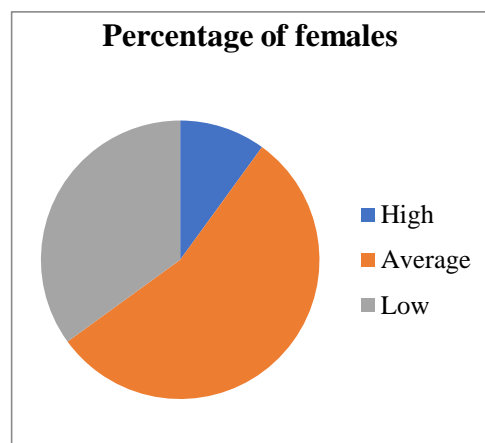
According to the table no.1 and figure1 & 2; 1.25, 20 and 28.75 percent male students have high, average and low level of metacognition respectively and 5, 27.5 and 17.5 percent female students have low level of metacognition. This is clear that most of the male college students have low level of metacognition and lots of female college students have average level of metacognition. Thus, level of metacognition is different among college student. Therefore, the proposed hypothesis has been accepted.

Table- 2

Comparison of male and female college students in terms of metacognition

Group	N	Mean	SD	t- value	P value
Male	40	82	5.71	2.32	0.05
Female	40	85	5.88		

Figure 3: showing Mean score of metacognition between male and female students
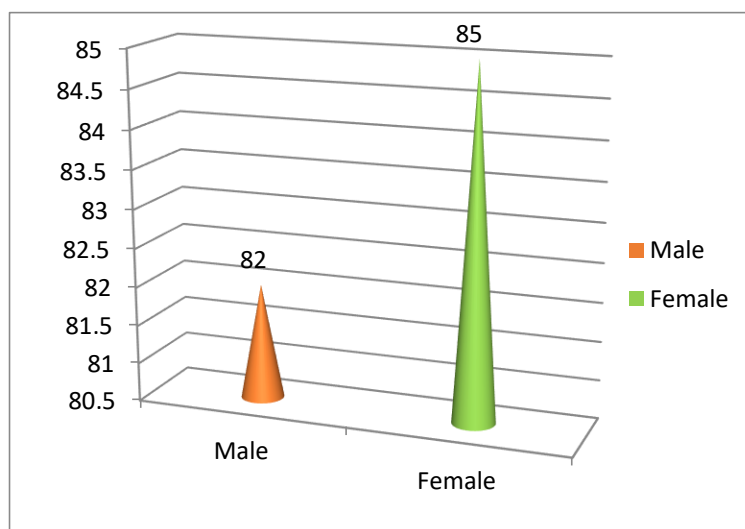
Above table shows that female students have got higher scores (85) than male students (82). High score indicates higher level of metacognition. t- value, 2.32 is also significant on the level of 0.05. This is clear that female college students have higher level of metacognition in comparison to male college students. Thus, hypothesis has been accepted that gender influences the level of metacognition.

Table-3

Comparison of Science and Social Science students in terms of metacognition

Group	N	Mean	SD	t-value	P-value
Science	40	87	6.24	5.43	0.01
Social science	40	81	3.094		

Figure-4: showing Mean score of metacognition between science and social science stream students
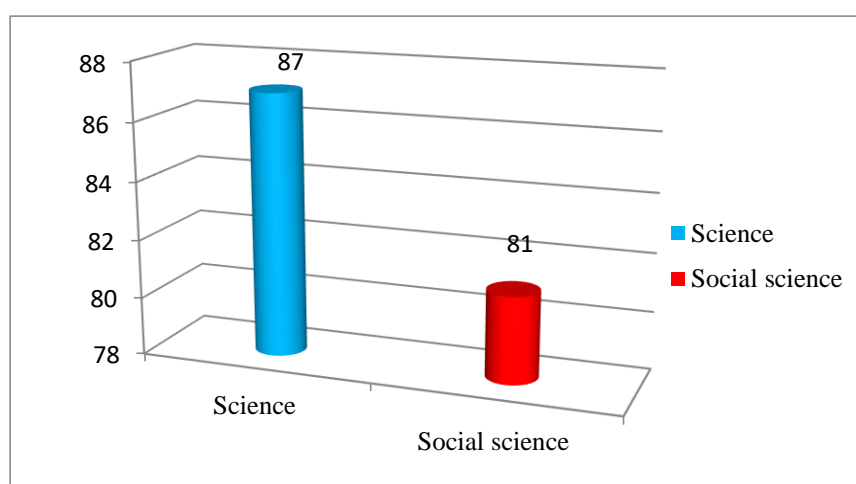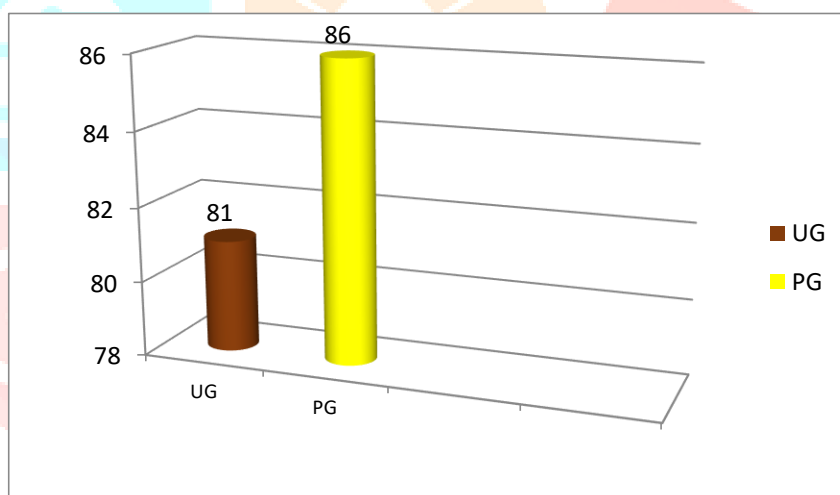
Above table shows that Science students have got higher scores (87) on metacognition Inventory in comparison to Social Science students (81). t-value,5.43 is also significant on 0.01 level. This is clear that stream of education significantly influences the level of metacognition. Thus, the proposed hypothesis has been accepted.

Table- 4

Comparison of Under Graduate and Post Graduate students in terms of metacognition

Group	N	Mean	SD	t-value	P-value
Under Graduate	40	81	4.55	0.174	NS
Post Graduate	40	86	33.92		

Figure-5; showing Mean score of metacognition between UG and PG students

Above table shows that Post Graduate students have got higher scores (86) on metacognition scale in comparison to Under Graduate students (81). But t-value, 0.174 is not significant. This is clear that level of education does not influence the level of metacognition. Thus, hypothesis has been rejected.

Discussion

Metacognition refers self knowledge about different cognitive capacities of a person. Such as knowledge of his/her memory, intelligence, habits etc. Table number 1 and pie chart show that most of the male students have low metacognition and most of the female students have average level of metacognition. Females have more awareness towards their selves. Panda (2017) found that girls had better metacognition knowledge than boys. According to the second result table it has been also found that gender significantly

influence the level of metacognition and females have higher metacognition than males. Pajeres and valiante (2002) & Ponkay and Blumenfeld (2012) also supports the result. Table-3 shows that students of science stream have higher level of metacognition than social science stream student. Science student have scientific views about their selves. Science students study the scientific reason of every event but Social Science students only focus on the description of events. Nongtodu & Bhutia (2017) found that science students have higher metacognition than arts students. According to the result table-4 it has been found that level of class (UG and PG) does not influence the level of metacognition. UG and PG students are fully mature and there is not so much gap between UG and PG students.

Conclusion

The present study reveals that level of metacognition is different among college students. Female college students have greater level of metacognition than male students. Stream of education influences the level of metacognition. Science students have higher metacognition than Social Science students. It has been also found that level of class (UG and PG) do not affect the level of metacognition.

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