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### **Relation Between Teachers' Metacognitive Awareness And Their Teaching Competency In South Bengal**

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#### **ABSTRACT:**

Education is an indispensable part of life, which intends to develop desirable habits, skills, and attitudes which make an individual a good citizen. It develops a cognitive, affective and psychomotor aspect of an individual. We may say that education is the main force, which influences the quality of life. The quality and efficiency of education always depend to a great extent on the qualities of teachers who truly add such values to the students. The major goal of teacher education program is not only to develop the teaching skill of teachers but also inculcate with itness among teachers. Thus metacognitive awareness is the factor of personal epistemology which helps teachers to accomplish their work more efficiently. Therefore, the present paper aimed to study the metacognitive awareness of secondary school teachers in South Bengal. Researcher also likes to study whether there is any significant difference in metacognitive awareness in teachers based in their gender, locality of institution and discipline variation. The data were collected from Nadia and Hooghly district. Researcher found that though gender and locality of institution does not make difference between teachers metacognitive awareness but discipline variation does.

**KEYWORDS:** metacognitive awareness, secondary teachers, teaching competency

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## **INTRODUCTION:**

In the middle of the 20<sup>th</sup> century, very famous constructivist theory of cognitive development was emerged by Piaget's (Piaget, 1977). Piaget's fundamental insight was that individuals construct their own understanding. The term Cognition (Latin: Cognoscere, to know, to conceptualize, to recognize, refer to the processing of information, applying knowledge, and changing preferences. It is a mental process that includes memory, attention, learning, producing & understanding language, reasoning etc. That may be conscious or unconscious.

Where cognition is a constant flow of information, metacognition is the knowledge and awareness of the monitoring process (Flavell et al., 1993; Schraw, 2001). The main distinction between cognition and Metacognition is that Metacognition is considered to be second-order cognition. For the last few decades, there is much debate over exactly what 'Metacognition' is. 'Meta' basically is a Greek word which means after, behind or beyond (Zechmeister & Nyberg, 1982). Meta means 'beyond' and cognition means 'to know'. The term 'Meta' refers to higher-order cognition about cognition and it also refers to higher order thinking which involves active control over the thinking process engaged in learning. 'Metacognition' is often defined as thinking about one's thinking, the factor of personal epistemology – Individuals beliefs about knowledge and knowing. It means cognition or knowledge about knowing and learning. Metacognition is a regulatory system that helps a person to understand and control their cognitive phenomenon. Flavell (1976) define Metacognition as, Knowledge and Cognition about Cognitive Phenomenon. According to Hacker (2009), Metacognition involves awareness of students, how to learn, an evaluation of their learning needs, generating strategies to meet these needs and then implementing the strategies.

## **REVIEW OF RELATED LITERATURE:**

Modern studies discuss about the importance of metacognition to help learner as well as teachers to be capable of develop plan, monitor and evaluate more efficiently. A variety of study report that students with good metacognition demonstrate good academic performance, In 2013 Choudhury, P. studied on the relation between metacognition and academic achievement of secondary students. The study reveal that there have a significant and positive relationship metacognitive ability and academic achievement in relation with total number of students, gender and category of class XI students of C.B.S.E Board. Where in another study Gul, F. & Shehzad, S. (2012) also studied on three different variable those are metacognition, goal orientation and academic achievement. The study aspires to find out relationship between these three variables (Goal Orientation, Metacognition and Academic Success) among graduate public private universities of Pakistan. The result indicates that there is a weak relationship between performance goals, mastery

goals and academic achievement. Abdellah, R. (2014) studied on the relationship between metacognitive awareness and academic achievement, and its relation to teaching performance of pre-service female teachers in Ajman University in United Arab of Emirates. Results indicate that there are positive relationship between metacognitive awareness and academic achievement as it measured by their GPA for pre-service female teachers. Interestingly, the results observed from the students' academic achievement seems to correlate positively with metacognitive regulation, but not with metacognitive knowledge. Lastly the results of the study also indicate that there has high correlation between metacognitive awareness and teaching performance for pre-service teachers. In another study Das, A., 2015 emphasis on the relationship between metacognitive ability and academic achievement of B.Ed students in Kamrup district of Assam. The purpose of the study was to assess the differences in metacognitive ability of B.Ed students in respect of their sex, locality, type of management and educational qualification, and to study the relationship between metacognitive ability and academic achievement of B.Ed students. The study reveal that there exists a significant difference in metacognitive ability of male and female, rural and urban, graduate and post graduate student, however no significance difference has been observed between students of Govt. and private teacher training colleges, and also there exists significant positive relationship between metacognitive ability and academic achievement of B.Ed students.

### **RATIONALE:**

As we all know that level of learning of students not only depends upon their effort but also the endeavor of a teacher. Metacognitive awareness of a teacher not only helps them to choose the appropriate teaching strategies for developing the level of learning of a student but also manifests teachers' behavior both inside and outside the classroom. As secondary level education is a crucial time for students, so, teachers should take care of their physical, psychological and intellectual development and metacognitive awareness helps teacher to evaluate on thoughts and work to develop their teaching. Therefore, this investigation has made an attempt to study the relation between teachers' metacognitive awareness and their teaching competency.

### **OBJECTIVES OF THE STUDY:**

- O<sub>1</sub>: To study the level of Metacognitive Awareness among secondary school teachers.
- O<sub>2</sub>: To study whether there exist any significant difference in the metacognitive awareness among secondary school teachers based on their Gender (male-female), Locality of Institution (rural-urban) and Discipline (language, science and social science) variation.
- O<sub>3</sub>: To know the relation between Metacognitive Awareness and Teaching Competency among secondary school teachers.

## HYPOTHESIS:

- H<sub>0</sub>1: There exists no significant difference in Metacognitive Awareness between male and female teachers.
- H<sub>0</sub>2: There exists no significant difference in Metacognitive Awareness between teachers of rural and urban area.
- H<sub>0</sub>3: There exists no significant difference in Metacognitive Awareness among language, science and social science teachers.
- H<sub>0</sub>4: There exists no significant relation between Metacognitive awareness and teaching Competency among secondary school teachers.

## LIMITATION:

The present study is limited to check the Metacognitive awareness of trainee teachers only. Moreover the study is limited to Nadia and Hooghlydistrict only.

## METHODOLOGY:

A simple survey method was used in this study. The methodology followed for the study discussed as follows:

## POPULATION AND SAMPLE:

All trainee teachers from secondary school teachers' of South Bengal constitute the population of the study. The sample consists of 230 teachers from various secondary school of Nadia and Hooghly District. A simple random technique has been used for the purpose of data collection.

Table -1: Distribution of the Sample

SI No.	Variables	Category	Size
1	Gender	Male	144
		Female	86
2	Locale of Institution	Rural	91
		Urban	139
3	Subject	Language	78
		Science	85
		Social Science	67

## TOOLS USED:

To assess the level of Metacognitive Awareness amongteachers ofNadia and Hooghly District, West Bengal, self made questionnaires were used, which consists 30 items of each. The following tools were –Metacognitive Awareness Inventory (developed and standardized by the researcher) and Teaching Competency Scale (developed and standardized by the researcher).

## STATISTICAL TECHNIQUE:

The researcher used the statistical technique percentage, mean, standard deviation (SD), t-test etc. for analyzing and interpretation of the data collected for the study.

## SOFTWARE USED:

The raw data were tabulated in MS Excel 2007 and analysis of data done through SPSS 20.0 version.

## ANALYSIS AND INTERPRETATION OF THE DATA:

O<sub>1</sub>: To study the level of Metacognitive awareness among secondary school teachers'.

After administrating teachers' Metacognitive Awareness inventory (MAI) data were tabulated. For the study investigator categorized the whole sample for the study into Low, Average and High Metacognitive Awareness groups based on the scores of Metacognitive Awareness Scale. The scores between 79 – 102 are categorized as Low level awareness, 103 – 126 are categorized as Average level awareness and 127 – 150 are categorized as High level Awareness.

**Table : 2 Level of Metacognitive Awareness among Secondary School Teachers'**

Level of Metacognitive Awareness	Scores	Frequency	Percentage
High Awareness	127-150	96	41.74%
Average Awareness	103-126	126	54.78%
Low Awareness	79-102	08	3.48%
Total		<b>230</b>	<b>100%</b>

Table 2 reveals that 3% teachers have low level of metacognitive awareness, 55% of them have average level and 42% of them have high level of metacognitive awareness. Therefore it shows majority of teachers have average level of metacognitive awareness. So, it can be concluded that the level of metacognitive awareness of secondary school teachers are not equally distributed.

**Table : 3 Descriptive statistics for the score on Metacognitive Awareness**

	N	Mean	Std. Deviation	Skewness	Kurtosis
Metacognitive Awareness	230	123.86	10.75	-.310	.227

It is inferred from Table 3 that the mean score 123.865 out of 150 in MAI (Metacognitive Awareness Inventory) indicate that secondary teachers have not in normal range of metacognitive awareness in South Bengal. The descriptive statistics also shows Std. Deviation 10.756. The skewness value is -0.310 and kurtosis value is 0.227 for metacognitive awareness.

H<sub>0</sub>1: There exists no significant difference in Metacognitive Awareness between male and female teachers.

**Table 4: Difference between Male and Female Teachers in their Metacognitive Awareness**

Variable	Male (N=144)		Female (N=86)		Levene's Test for Equality of variance		t-test for equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig	t	Df	Sig.(2-tailed)	
Meta-cognition	122.8	10.29	125.52	11.36	3.911	.049	-1.77*	165.136	.078	Not significant

(\*Not-significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F=3.911$  and  $P= 0.049$  ( $p>0.05$ ) for gender variation, so equal variance can be assumed for the case. Table-4 also shows that in case of comparing mean score of male and female teachers the calculated  $t_{(165.136)}$  value is 1.77 and  $P=0.078$  ( $p>0.05$ ). Hence, 't' is not significant at 0.05 level of significance. So, the null hypothesis is not rejected and it can be concluded that male and female teachers are not significantly different on the measure of their Metacognitive awareness.

H<sub>02</sub>: There exists no significant difference in Metacognitive Awareness between teachers of rural and urban area.

**Table 5: Difference between Rural and Urban Teachers in their Metacognitive Awareness**

Variable	Rural (N=91)		Urban (N=139)		Levene's Test for Equality of variance		t-test for equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig	t	Df	Sig.(2-tailed)	
Meta-cognition	123.07	10.32	124.38	11.03	1.665	.198	-.899*	228	.370	Not significant

(\*Not-significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F=1.665$  and  $P= 0.98$  ( $p>0.05$ ) for gender variation, so equal variance can be assumed for the case. Table-5 also shows that in case of comparing mean score of rural and urban teachers the calculated  $t_{(228)}$  value is .899 and  $P=0.370$  ( $p>0.05$ ). Hence, 't' is not significant at 0.05 level of significance. So, the null hypothesis is not rejected and it can be concluded that rural and urban teachers are not significantly different on the measure of their Metacognitive awareness.

H<sub>03</sub>: There exists no significant difference in Metacognitive Awareness among language, science and social science teachers.

**Table 6: Group Statistics of Metacognitive Awareness \_ Discipline Variation**

Testing Hypothesis	Factor Variable	Dependent Variable	N	Mean	Std. Deviation
H <sub>03</sub>	Language	Metacognitive Awareness	78	121.26	10.64
	Science		85	123.82	8.775
	Social Science		67	123.86	10.75

**Table 7: ANOVA of Teachers Metacognitive Awareness**

	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	1159.361	2	579.681	5.193	.006	F Significant at 0.05 Level H <sub>03</sub> Rejected
Within Groups	25337.460	227	111.619			
Total	26496.822	229				

In case of ANOVA test of between & within groups the  $F_{(2,227)}$  value is 5.193 and  $P=0.006$  ( $p<0.05$ ) for the discipline variation of teachers. So, the  $H_{03}$  is rejected and it can be conclude that there is significant difference among language, science and social science teachers' in relation with their metacognitive awareness. Therefore, independent sample post Hoc test is required to find out differences between Language, Science and Social science teachers in their metacognitive awareness.

**Table 8: Post Hoc Test (LSD) of Teachers' Metacognitive Awareness \_ Discipline Variation**

Multiple Comparisons						
LSD						
(I) Discipline	(J) Discipline	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Language	Science	-2.55430	1.65655	.124	-5.8185	.7099
	Social Science	-5.67107*	1.75982	.001	-9.1387	-2.2034
Science	Language	2.55430	1.65655	.124	-.7099	5.8185
	Social Science	-3.11677	1.72601	.072	-6.5178	.2843
Social Science	Language	5.67107*	1.75982	.001	2.2034	9.1387
	Science	3.11677	1.72601	.072	-.2843	6.5178

\*The mean difference is significant at the 0.05 level.

## INTERPRETATION:

From the analysis in Table 8 shows that, in comparison between language and science group, it was found that the mean difference is 2.55430 and p-value is 0.124. Again in compared between language and social science group, it was found that the mean difference is 5.67107 and p-value is 0.001. Now it is observed that in the comparison of language and science group  $p>0.05$  and language and social science  $p<0.05$ . Therefore it can be conclude that there is no significant difference between language and science teachers in their metacognitive awareness but there is significant difference between language and social science teachers in their metacognitive awareness. In comparison between science and social science group, it was found that the mean difference is 3.11677 and p-value is 0.072. Now it is observed that in the comparison of science and social science

group  $p > 0.05$ . Therefore it can be concluded that there is no significant difference between science and social science teachers in their metacognitive awareness.

**Therefore**, from the above description, the  $H_03$  is rejected and it can be concluded that there is significant difference among language, science and social science teachers' in relation with their metacognitive awareness.

$H_04$ : There exists no significant relation between the Metacognitive Awareness and Teaching Competency among secondary school teachers.

**Table 9: Correlation matrix of Metacognitive awareness and Teaching Competency**

		Total_MA	TOTAL_TC
TOTAL_MA	Pearson Correlation	1	.223**
	Sig. (2-tailed)		.001
	N	230	230
TOTAL_TC	Pearson Correlation	.223**	1
	Sig. (2-tailed)	.001	
	N	230	230

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

### INTERPRETATION:

From the analysis in Table 9 shows that, the correlation value at 0.01 level is .223 ( $r=0.223$ ;  $p < 0.01$ ). Hence, the correlation is significant at both 0.05 and 0.01 level of significance. Therefore  $H_04$  is rejected. So, it can be conclude that there is significant and positive correlation between Metacognitive Awareness and Teaching Competency among secondary school teachers.

### FINDINGS:

- Majority of secondary teachers in Nadia and Hooghly district of South Bengal have average level of metacognitive awareness.
- There is no significant difference between male and female teachers in their metacognitive awareness. So, it can be conclude that the variation of gender does not influence the metacognitive awareness of secondary school teachers.
- There is no significant difference between rural and urban teachers in their metacognitive awareness. So, it can be conclude that the variation of locality of institution does influence the metacognitive awareness of secondary school teachers.
- There is significant difference between language, science and social science teachers in their metacognitive awareness. So, it can be conclude that the variation of discipline does influence the metacognitive awareness of secondary school teachers.
- There is significant and positive correlation between metacognitive awareness and teaching competency among secondary school teachers at Nadia and Hooghly district of South Bengal.



## CONCLUSION:

The findings of the study indicate that metacognitive awareness and teaching competency have positive and significant relationship. It can be conclude that by using metacognitive awareness to teach different subjects teacher gain an understanding of those process and methods that helps them to be competent in their profession field. So, it is important to focus our attention by giving emphasis on manifesting metacognitive awareness of teachers for developing multiple competencies and applying them in classroom.

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