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METACOGNITIVE ABILITY AMONG STUDENT TEACHERS

Article Particulars

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Abstract

The core objective of the present study is to outline the metacognitive ability of student teachers of Coimbatore and Tirupur districts of Tamilnadu. It is based on data collected from 745 student teachers studying B.Edfrom colleges of education. Simple random sampling technique has been used to collect the sample. The Metacognitive abilityscale has been used as tool to collect the data. Results indicate that the student teachers possess moderate metacognitive ability. It has also been found that there exists do not significantly differ in metacognitive ability with respect to sub variables such as Gender, Locality, Family type, Medium of education, Study preference.

Keywords*: metacognitive ability, B.Ed. colleges, strategies, learning task, problem solving, learning goal*

Introduction

Metacognition refers to awareness of one's own knowledge—what one does and doesn't know—and one's ability to understand, control, and manipulate one's cognitive processes (Meichenbaum, 1985). It includes knowing when and where to use particular strategies for learning and problem solving as well as how and why to use specific strategies. Metacognition is the ability to use prior knowledge to plan a strategy for approaching a learning task, take necessary steps to problem solve, reflect on and evaluate results, and modify one's approach as needed.

Cognitive strategies are the basic mental abilities we use to think, study, and learn (e.g., recalling information from memory, analyzing sounds and images, making associations between or comparing/contrasting different pieces of information, and making inferences or interpreting text). In contrast, metacognitive strategies are used to ensure that an overarching learning goal is being or has been reached.

Researchers distinguish between metacognitive knowledge and metacognitive regulation (Flavell, 1979, Schraw& Dennison, 1994). Metacognitive knowledge refers to

what individuals know about themselves as cognitive processors, about different approaches that can be used for learning and problem solving, and about the demands of a particular learning task. Metacognitive regulation refers to adjustments individuals make to their processes to help control their learning, such as planning, information management strategies, comprehension monitoring, de-bugging strategies, and evaluation of progress and goals.

Livingston (1997) provides an example of all three variables: "I know that I (*person variable*) have difficulty with word problems (*task variable*), so I will answer the computational problems first and save the word problems for last (*strategy variable*)."

Research shows that metacognitive skills can be taught to students to improve their learning (Nietfeld&Shraw, 2002; Thiede, Andersonn&Therriault, 2003).Constructing understanding requires both cognitive and metacognitive elements. It is through this "thinking about thinking," this use of metacognitive strategies, that real learning occurs. As students become more skilled at using metacognitive strategies, they gain confidence and become more independent as learners.

Individuals with well-developed metacognitive skills can think through a problem or approach a learning task, select appropriate strategies, and make decisions about a course of action to resolve the problem or successfully perform the task. (North Central Regional Educational Laboratory, 1995).

Moreover, individuals who demonstrate a wide variety of metacognitive skills perform better on exams and complete work more efficiently—they use the right tool for the job, and they modify learning strategies as needed, identifying blocks to learning and changing tools or strategies to ensure goal attainment. Because Metacognition plays a critical role in successful learning, it is imperative that instructors help learners develop metacognition.

Metacognitive abilities of the students will determine his / her success in the academic endeavor. A student with better metacognitive abilities do well in examination and other academic activities but a student who is not good enough in meta cognitive skills will show poor performance in the academic activities. School students are in high pressure to achieve high score in their school examination it could be tackled by using appropriate strategies. The investigator felt that metacognitive abilities are the one we should study among higher secondary school students. The findings of the study will help the students, teachers, parents to provide training on improving the metacognitive skills among the students.

Objectives of the Study

The investigator of the present study framed the following objectives:

1. To study the Metacognitive ability of the student teachers.
2. To study the significance of the difference between the following pairs of sub samples with respect to their metacognitive ability.

- Gender [Male / Female]
- Locality [Rural / Urban]
- Family type [Nuclear / Joint]
- Medium of education (Tamil/English)
- Study preference (Individual/Group)

Hypotheses of the Study

The investigator of the present study will frame relevant hypotheses based on the above objectives.

1. The Metacognitive ability level among student teachers inCoimbatore and Tirupur District will be high.
2. There is no significant difference between male and female student teacherswith respect to Metacognitive ability
3. There is no significant difference between rural and urban area student teacherswith respect to Metacognitive ability
4. There is no significant difference between nuclear and joint family student teacherswith respect to Metacognitive ability
5. There is no significant difference between Tamil and English mediumstudent teacherswith respect to Metacognitive ability
6. There is no significant difference between student teachers whose study preference as individual and group with respect to Metacognitive ability.

Method of Study

One of the important elements in research process is defining the procedure or methods of research in very vividly. In this present study, the investigator applied normative survey as a method. The normative survey method studies, describes and interprets what exists at present.

Sample and Location

The investigator of the study proposed to collect data from Student teachers studying B.Ed. in Coimbatore and Tirupur districts. For this study a sample of 745 to be drawnstudent teachersofdifferent subjects from twenty five different colleges of Education. To select a sample from the population, the investigator planned to adopt simple random sampling technique.

Variables Used

Variables are the conditions or characteristics that the researcher manipulates, controls or observes. Different variables selected by the investigator given the following sub-headings.

Dependent Variable

The dependent variables are the conditions or characteristics that appear, disappear, or change as the researcher introduces, removes, or change independent variables. For the present study, **Metacognitive ability** was takenas a dependent variable.

Independent Variable

The independent variables are the conditions or characteristics that the researcher manipulates, or controls in his/her attempt to ascertain their relationship to observed phenomena. For this study, the investigator used five demographic variables they are; (a) Gender, (b) Locality, (c) Medium of Instruction(d) Family Type(e) study preference.

Statistical Techniques

In this present investigation the following statistical techniques were used.

- Measures of central tendency (Mean)
- Measures of variability (standard deviation)
- Independent sample 't' test and

Tools Used

The investigator of the present study will use the following tools for data collection.

- Metacognitive ability scale was prepared PunithaGovil(2008)
- Personal Data Sheet constructed by the investigator of the present study.

Description of Metacognition Ability Scale

The investigator of the present study used a scale to measure metacognitive ability of the students. It has four options and a minimum score for this scale is 30and maximum score for this scale is 120.

In the present study, the co-efficient of internal consistency has been found out by the split-half method. It is found to be 0.787. The co-efficient of stability is also determined by the test-retest method. It is found to be 0.686.

Percentile Norm

The following table represents the percentile norm for this metacognitive ability scale.

S.no	Percentile	Score Range	Norm
1.	Below Percentile 25	Up to 60	low Metacognitive ability
2.	Percentile 25 to 75	Between 60 to 95	Moderate Metacognitive ability
3.	Above percentile 75	Above 95	High Metacognitive ability

Analysis and Interpretation of Data

Metacognitive Ability of Higher Secondary Students

One of the important objectives of the present investigation is to study the Meta cognitive ability of student teachers. For this, the investigator used Metacognitive ability

scale. The maximum score for this tool is 120 and a minimum score is 30. Hence, one who secures a score above 95 (Q3) indicates high level of meta cognitive ability, a score between 61 and 95 indicates average level of meta cognitive ability and a score below 60 (Q_2) low level of indicates the high meta cognitive ability. The computed values of entire sample and its sub-samples are given in the Table 4.1.

Table – 1The Mean, Standard Deviation and't' Value of Higher Secondary Students in Metacognitive Ability

S.No.	Variable	Sample	N	Mean	S.D.	't' Value	LS
1	Gender	Male	204	90.96	9.80	1.02	Not Significant
		Female	541	90.20	8.63		
2	Locality	Rural	360	90.20	8.62	.642	Not Significant
		Urban	385	90.61	9.29		
3	Medium	Tamil	321	90.18	9.27	.605	Not Significant
		English	424	90.58	8.74		
4	Family Type	Nuclear	550	90.20	8.45	1.07	Not Significant
		Joint	195	91.00	10.30		
5	Study Preference	Group	226	90.77	8.77	.715	Not Significant
		Individual	519	90.25	9.06		
6	**Total**		**745**	**90.49**	**13.02**	**-**	**-**

It is evident from the Table 1, the calculated mean score of entire sample is 90.49 and the standard deviation value is 13.02. The mean score of the higher secondary students is higher than the Percentile 25 and less than percentile 75 of the scale (90). Hence, it is inferred that the student teachers are having average level of metacognitive ability.

The mean score of different sub samples are ranging from90.18 to 91.00. These mean score of higher secondary students is higher than the Percentile 25 and less than percentile 75 of the scale (90). Hence, it inferred that irrespective of sub samples all the student teachers are having average level of metacognitive ability.

The calculated' values are found to be 1.02, .642, .605, 1.07 and .715 respectively for gender, locality, medium, family type and study preference. These values are not significant at 0.05 level hence, it is inferred that the student teachers are not differ significantly in their metacognitive ability with respect to gender, locality, medium, family type and study preference.

Findings

The following are the main findings of the present investigation.

- The student teachers are having moderate metacognitive ability.
- The male and female student teachersdo not differ significantly in their metacognitive ability.

- The rural and urban area student teachers do not differ significantly in their metacognitive ability.
- The nuclear and joint family student teachers do not differ significantly in their metacognitive ability.
- The Tamil and English mediumstudent teachers do not differ significantly in their metacognitive ability.
- The study preference of the student teachersdo not differ significantly in their metacognitive ability.

Conclusion

The Above results shows that student teachers are do not differ frombetween the following pairs of sub samples with respect to their metacognitive ability such as gender, locality, medium of instruction, family type and study preference. Based on the mean score the student teachers are having average level of metacognitive ability. From the above results its inferred that student teachers are do not differ significant with the subsamples with respect to metacognition.

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