

**A COMPARATIVE ANALYSIS OF METACOGNITIVE
AWARENESS, SELF-REGULATED LEARNING, CRITICAL
THINKING, AND ACADEMIC PERFORMANCE AMONG
STUDENTS OF KERALA AND BIHAR**



ABSTRACT

The objective of the study was to compare metacognitive awareness, self-regulated learning, critical thinking, and academic performance among students from Kerala and Bihar. The sample consisted of 200 high school students ranging from 12 to 15 years from Kerala and Bihar, 100 from each state. A purposive sampling method was used. The study used 't'-test for comparative analysis. The results revealed that the students from Kerala held higher metacognitive awareness, self-regulated learning, critical thinking ability, and academic performance than those from Bihar. The findings of this comparative analysis may be used for policy-making by education leaders and governments in the education sector.

Keywords : *Metacognitive awareness, Self-Regulated learning, Critical thinking, and Academic performance.*

Introduction

Metacognition, in simple terms, is referred to as "thinking about thinking", a construct suggested by Flavell (1979). It is a regulatory system that helps others understand and control their cognitive performance. A metacognitive student is conscious of his or her learning processes and makes changes as required. When one strategy fails to achieve the desired results, a metacognitive student identifies his or her error and moves to another.

Self-Regulated Learning (SRL) is the self-directive process by which learners transform their mental abilities into academic skills (Barry Zimmerman et al., 1992). It also refers to the constructive use of self-directive mechanisms, cognitive habits, and feelings to accomplish goals, learn skills, and control emotional responses in the sense of education and learning (Abar&Loken, 2010). According to Margaret Rouse, Critical Thinking is the capacity to be objective, rational, and analytical about subjects, situations, and cognitive problems. As a process, Critical Thinking is the ongoing effort to improve our cognitive abilities in that capacity. Critical thinking is reasoned, reflective thinking focused on deciding what to believe or what to do (Ennis, 1996).

As defined by Crow & Crow (1969) academic achievement or performance is the extent to which the

learner is profiting from instruction in the given area of learning. The achievement reflects the skill or knowledge that a person has acquired through the training imparted to him. It is the extent to which a student, teacher, or institution has achieved their short or long-term educational goals. Academic achievement has been measured through examinations or continuous assessments, but there is no general agreement on how it is best evaluated or which aspects are most important-procedural knowledge such as skills, or declarative knowledge such as facts. According to estimates, many

ELIZABETH CHIRAYIL

Master Student, Department of Psychological Sciences, Central University of South Bihar, India

NARSINGH KUMAR

(Corresponding Author), Associate Professor, Department of Psychology, University of Allahabad, India.

PIYUSH DEURKAR

Research Scholar, Department of Psychological Sciences, Central University of South Bihar, India

SANDRA SURESH

Research Scholar, Department of Psychological Sciences, Central University of South Bihar, India.

children (between 20 and 30 percent) face learning challenges during their elementary school years (Glidewell & Swallow, 1968).

Objectives

1. To study the differences in metacognitive awareness among school students of Kerala and Bihar.
2. To study the differences in self-regulated learning among school students of Kerala and Bihar.
3. To study the differences in critical thinking among school students of Kerala and Bihar.
4. To study the differences in academic performance among school students of Kerala and Bihar.

Methodology

Sample

The sample size comprised 200 high school students from the Indian states of Bihar and Kerala. One hundred samples were collected from each state. The age of the sample ranges between 12-15 years. A purposive sampling method was used to collect the sample.

Tools and Techniques

Tools including, the Metacognitive Awareness Inventory developed by Schraw and Dennison RS. (1994), the Self-Regulated Learning Questionnaire (1995), the Critical Thinking Motivation Scale by Saiz and Valenzuela and the Academic Performance Rating Scale by George J Dupaul and Mark D Rapport (1991) were used in the present study to measure the respective variables of the study.

Statistical Techniques Used

All the analyses were done using the Statistical Package for Social Sciences-version 25 (SPSS). 't' test was administered to test all the hypotheses.

Results

This study is a comparative analysis based on empirical data collected from Kerala and Bihar's educational institutions. The t-test was carried out to examine the differences between these two states concerning the variables taken in the study.

Hypothesis 1 : There is no significant difference in metacognitive awareness and its dimensions of Kerala and

Bihar students

Table 1
Difference in the Metacognitive awareness and its dimensions of Kerala and Bihar students



Dimension	State	N	Mean	S.D.	Calculated 't' value	p-value
Procedural Knowledge	Kerala	100	7.42	0.75452	13.48	0.00
	Bihar	100	5.6	1.11916		
Declarative Knowledge	Kerala	100	5.92	1.27667	15.12	0.00
	Bihar	100	2.95	1.49325		
Conditional Knowledge	Kerala	100	3.62	1.00282	12.76	0.00
	Bihar	100	2.44	0.98801		
Planning	Kerala	100	5.03	1.26695	11.53	0.00
	Bihar	100	2.76	1.24819		
Information	Kerala	100	7.32	1.45561	13.07	0.00
Management Strategies	Bihar	100	5.13	1.21983		
Comprehension Monitoring	Kerala	100	5.25	1.424	13.07	0.00
	Bihar	100	2.89	1.10914		
Debugging Strategies	Kerala	100	4.3	0.74536	11.99	0.00
	Bihar	100	2.8	1.00504		
Evaluation	Kerala	100	4.22	1.29162	9.07	0.00
	Bihar	100	2.58	1.26475		
Metacognitive Awareness	Kerala	100	43.08	5.57172	23.86	0.00
	Bihar	100	27.15	3.67733		

Table 1 shows that the students from Kerala scored higher than students from Bihar in procedural knowledge, declarative knowledge, conditional knowledge, planning, information management strategies, comprehension monitoring, debugging strategies, evaluation and metacognitive awareness in total.

Hypothesis 2 : There is no significant difference in self-regulated learning, critical thinking and academic performance of Kerala and Bihar students.

Table 2
Difference in Self-Regulated Learning, Critical Thinking and Academic Performance of Kerala and Bihar Students

Variable	State	N	Mean	S.D.	Calculated 't' value	p value
Self-Regulated Learning	Kerala	100	85.77	6.244	16.948	0.00
	Bihar	100	70.85	6.2059		
Critical Thinking	Kerala	100	111.03	9.9873	6.138	0.00
	Bihar	100	101.32	12.27		
Academic Performance	Kerala	100	81.49	6.1307	1.969	0.05
	Bihar	100	73.65	5.7373		

Table 2 shows that students from Kerala scored higher than the students from Bihar, in self-regulated learning, critical thinking, and academic performance.

Discussion

The present research mainly emphasized the comparative study between the students from the states of Kerala and Bihar concerning the variables used. The present study results indicated that the students from Kerala exhibited higher metacognitive awareness, self-regulated learning, and critical thinking. Further, their academic performance is also higher when compared to the students of Bihar.

National Education Policy, 2020 emphasizes the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities - both the 'foundational capacities of literacy and numeracy and 'higher-order cognitive capacities, such as critical thinking and problem-solving – but also social, ethical, and emotional capacities and dispositions. One of the fundamental principles of this policy that will guide both the education system and the individual institutions within it includes “flexibility” so that learners can choose their learning trajectories and programs. And, thereby choose their paths in life according to their talents and interests; with emphasis on conceptual understanding rather than rote learning and learning-for-exams; creativity, and critical thinking to encourage logical decision-making and innovation. So, this study, which emphasizes the importance of metacognitive awareness, self-directed learning, and critical thinking on students' academic performance, provides much applicability in the education field.

Conclusion

The study has compared students of Kerala and Bihar in terms of metacognitive awareness, self-regulated learning, critical thinking, and academic performance. The students from Kerala were found significantly better in metacognitive abilities, self-regulated learning critical thinking, and also academic success.

Conflict of interest : There is no conflict of interest.

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