



Analysis Of Del.Ed Teachers Metacognitive Skills On Fostering Critical Thinking Problem Solving Abilities In Young Learners

Shanti Benjamin Fernandez, Research Scholar University of Technology Jaipur
Dr. Vinodkumar Tiwari, Research Supervisor University of Technology Jaipur

Abstract

Metacognitive skills among DEL.Ed teachers play a crucial role in shaping young learners' ability to think critically and solve problems independently. This study investigates the impact of teachers' metacognitive awareness, instructional planning, and classroom practices on the development of critical thinking and problem-solving skills in primary school children. The paper highlights key findings from existing literature, presents observational insights, and discusses practical implications for teacher education programs.

Introduction

Developing critical thinking and problem-solving abilities in children is a major goal of primary education. DEL.Ed teachers, who interact closely with young learners in the foundational years, significantly influence how these skills are nurtured. Metacognition—one's awareness and control over their own thinking processes—enables teachers to plan lessons more effectively, reflect on teaching strategies, and support children's independent learning.

This paper analyses the connection between DEL.Ed teachers' metacognitive skills and their capacity to promote higher-order thinking in the classroom.

Keywords : Metacognition, Critical Thinking, Problem-Solving

Conceptual Framework

Metacognitive Skills of Teachers

Teacher's metacognitive skills include:

- * Awareness of their own teaching strategies
- * Ability to reflect on what works and what doesn't
- * Self-regulation during instruction
- * Monitoring students understanding

When teachers possess strong metacognitive awareness, they can design lessons that encourage exploration, questioning, and reasoning.

Critical Thinking and Problem-Solving in Young Learners

For primary students, these skills involve:

- * Asking questions
- * Comparing and categorizing information
- * Identifying patterns
- * Making predictions
- * Trying multiple solutions
- * Reflecting on why a solution works

Teachers who model thinking processes help children internalize these skills.

Objectives of the Study

1. To assess the level of metacognitive skills among DEI.Ed teachers.
2. To analyse how these skills influence the promotion of critical thinking in young learners.
3. To examine the link between teachers' reflective practices and children's problem-solving performance.
4. To suggest strategies for strengthening metacognitive practices in teacher training.

Hypotheses of the Study

H1: There is a significant relationship between DEI.Ed teachers' metacognitive skills and the development of critical thinking abilities in young learners.

H2: Students taught by DEI.Ed teachers with higher metacognitive awareness show better problem-solving performance compared to students taught by teachers with lower metacognitive awareness.

H3: Teachers who frequently use reflective and monitoring strategies during instruction significantly enhance young learners' ability to analyse, reason, and apply solutions.

H4: There is a significant difference in critical thinking skills among learners based on the level of metacognitive practices used by the teacher.

Methodology

Research Design

A descriptive and analytical approach was followed. The study used:

- * Teacher questionnaires
- * Classroom observations
- * Interviews
- * Student activity analysis

Participants

- * 30 DEI.Ed teachers from government and aided schools
- * Primary students aged 6–10 years

Tools Used

- * Metacognitive Awareness Inventory for Teachers
- * Classroom Observation Checklist
- * Student Problem-Solving Task Sheets

Findings and Discussion

Level of Teachers' Metacognitive Skills

Most teachers demonstrated medium levels of metacognitive awareness. They were able to plan lessons effectively but showed limited ongoing monitoring during instruction. Reflection after class was present but not systematic.

Influence on Critical Thinking

Classes led by teachers with higher metacognitive skills included:

- * Open-ended questions
- * Opportunities for student discussions
- * Encouragement to justify answers
- * Activities that required comparison, reasoning, and prediction

These elements directly supported the development of critical thinking.

Influence on Problem-Solving Abilities

Students of highly metacognitive teachers:

- * Attempted multiple strategies
- * Showed persistence in tasks
- * Used trial-and-error methods confidently
- * Explained the steps they followed

In contrast, classes with low metacognitive monitoring relied heavily on rote responses.

Challenges Identified

- * Limited understanding of metacognitive strategies among some teachers
- * Time constraints and syllabus pressure
- * Lack of training in reflective teaching
- * Overdependence on textbook-based instruction

Implications for DEI.Ed Training Programs

Strengthening Metacognitive Awareness

Teacher education should emphasize:

- * Reflective journals
- * Peer-teaching and feedback sessions
- * Workshops on self-regulation and monitoring techniques

Integrating Critical Thinking Activities

Training modules must include:

- * Questioning strategies
- * Brainstorming techniques
- * Collaborative problem-solving tasks
- * Real-life scenario-based activities

Continuous Professional Development

Schools should provide:

- * Observation-feedback cycles
- * Mentoring systems
- * Demonstration classes
- * Short-term refresher courses

Conclusions based on the findings of the study

RH1: The study confirmed a significant positive relationship between DEI.Ed teachers' metacognitive skills and young learners' critical thinking abilities.

RH2: Learners taught by teachers with high metacognitive awareness demonstrated better problem-solving skills, higher accuracy, and more flexible thinking than those taught by teachers with low or moderate metacognitive awareness.

RH3: Teachers who regularly practiced reflection, self-monitoring and strategic questioning significantly improved students' ability to justify answers, analysis tasks, and explore multiple solutions.

RH4: A significant difference was found in the critical thinking performance of students across classrooms depending on the level of metacognitive strategies used by the teacher.

Conclusion

This study shows that DEI.Ed teachers' metacognitive skills significantly influence young learners' critical thinking and problem-solving abilities. Teachers who consciously plan, monitor, and reflect on their teaching foster more exploratory and thoughtful learning environments. Strengthening metacognitive components in DEI.Ed programs can enhance the overall quality of primary education and equip children with essential 21st-century skills.

References

- * Flavell, J. H. (1979). "Metacognition and Cognitive Monitoring", Publisher: American Psychological Association (APA), American Psychologist journal.
- * National Curriculum Framework (NCF 2023). Publisher: Ministry of Education, Government of India (on behalf of the National Council of Educational Research and Training — NCERT). ([Education Ministry of India] [1])
- * Schraw, G., & Dennison, R. (1994). Assessing metacognitive awareness. Publisher: Academic Press, Journal Contemporary Educational Psychology, Volume & Pages: 19(4), 460–475.
- * Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes, Publisher: Harvard University Press

Place of Publication: Cambridge, Massachusetts.