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META-COGNITION AND LEARNING ENGLISH

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ABSTRACT

This study focuses on understanding meta-cognitive skills among Class IX students and how these skills relate to their achievement in English. Meta-cognition refers to a learner’s ability to think about and manage their own learning processes, such as planning, monitoring, and evaluating their understanding. The study was conducted on a sample of 1500 students from different schools in urban and rural mandals of Rajahmundry, Andhra Pradesh, using a self-developed meta-cognitive inventory. The research examined differences in meta-cognitive skills based on birth order and accommodation (day scholars and hostellers), as well as the relationship between meta-cognition and academic achievement. The findings revealed that meta-cognitive skills vary significantly with respect to birth order and type of accommodation. Additionally, a strong relationship was found between students’ meta-cognitive abilities and their performance in English. The study highlights the importance of developing meta-cognitive skills to improve learning outcomes and academic success among students.

KEYWORDS: Meta-cognition, Academic achievement, English learning, Birth order, Accommodation.

INTRODUCTION

Meta-cognition was first introduced by John H. Flavell in 1979 and often described as “thinking about thinking” since it’s introduction. Meta-cognition refers to our ability to reflect on, understand, and regulate our own mental processes. This includes being aware of how we learn, recognizing when we understand something (or don’t), and adjusting our strategies accordingly. Over time, researchers such as Ann L. Brown (1987) and Gregory Schraw & Rayne A. Sperling Dennison (1994) have expanded this concept, emphasizing its importance in effective learning and self-regulation.

Meta-cognition has vast scope in psychology. In developmental psychology, it is closely tied to the growth of self-awareness and understanding others’ thoughts. In experimental settings, researchers examine how individuals monitor and evaluate their own memory processes. In education, it plays a crucial role in self-regulated learning, where students actively plan, monitor, and evaluate their learning strategies. It is also linked to executive functioning in neuropsychology and has growing relevance in social and clinical contexts.

Scholars like Thomas O. Nelson and Louis Narens describe meta-cognition as operating on two levels: the “object level” (where thinking occurs) and the “meta level” (where thinking is monitored and controlled). This interaction allows individuals to guide their learning more effectively. Similarly, Anastasia Efklides (2008) highlights that meta-cognition also includes emotional and motivational awareness, such as recognizing anxiety during a task and adjusting behavior accordingly.

In simple terms, meta-cognition allows individuals to plan how to approach a task, monitor their progress, and evaluate outcomes. By developing these skills, learners not only improve academic performance but also gain greater independence and confidence in their thinking.

REVIEW OF RELATED LITERATURE

Nivetha P & Srinivasan R (2024) reviewed 29 Ph.D. theses (2012–2022) from the Shodhganga repository to understand trends in meta-cognitive approaches in English Language Teaching (ELT) in India. Using a PRISMA-based systematic review, the researchers found that most studies relied on experimental and quantitative methods, with less use of



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diverse approaches. The study suggests this trend is due to research culture, data accessibility, and limited interdisciplinary work, and highlights the need for more varied research methods in ELT.

S. Hemalatha et al. (2023) examined how meta-cognitive teaching strategies improve reading comprehension among higher secondary students. Using an experimental method, students were trained to plan, monitor, and evaluate their reading. Their performance before and after the intervention was compared, showing clear improvement in understanding and engagement. The study emphasizes the importance of structured, reflective, and student-centered teaching methods.

F. Fan et al. (2016) investigated whether gender affects students' achievement in English among 220 secondary school students in Nigeria. Using an ex-post-facto design and t-test analysis, the results showed no significant difference between male and female students' performance. The study concludes that gender does not influence achievement and recommends equal and unbiased teaching practices.

OBJECTIVES OF THE STUDY

- To identify the differences in achievement in English among students with different levels of meta-cognitive skills.
- To assess the levels of meta-cognitive skills among Class IX students with respect to
 - Birth order of the child
 - Accommodation of the student

HYPOTHESES OF THE STUDY

H₀₁ – There would be no significant difference in meta-cognitive skills among IX class students with respect to their birth order.

H₀₂ – There would be no significant difference in meta-cognitive skills among IX class students with respect to whether they are day scholars or hostellers.

H₀₃ - There would be no significant relationship between meta-cognitive skills and achievement in English among IX class students.

METHODOLOGY

Sample: 1500 class IX students from various localities and school types in Rajahmundry, Andhra Pradesh.

Sampling Technique: Simple Random Sampling Technique.

Variables:

Independent variable – Meta-cognitive Skills

Dependent variable – Achievement

Demographic variables – Birth order of the child, Accommodation [Day Scholar/Hosteller].

Tool used for the study: Self-preparatory meta-cognitive inventory with 40 items.

Data Collection: Data was from approximately 25 secondary schools located in rural and urban areas of Rajahmundry, Andhra Pradesh. This sampling approach ensured representation of students from diverse backgrounds.

Statistical Techniques: Mean, Standard deviation, f – value and P – value.



ANALYSIS OF THE STUDY

Table No. 1 Significant difference between Achievement with Meta-cognition Inventory

Meta-cognition Inventory	Achievement	N	Mean	Std. Deviation	f - value	P - value
Planning	Low Achievement	379	21.84	8.358	244.577	0.000 **
	Moderate Achievement	734	27.05	6.016		
	High Achievement	387	32.34	5.516		
Monitoring	Low Achievement	379	23.24	5.792	263.579	0.000 **
	Moderate Achievement	734	27.1	5.406		
	High Achievement	387	32.03	4.618		
Evaluating	Low Achievement	379	24.77	5.209	218.632	0.000 **
	Moderate Achievement	734	27.46	5.047		
	High Achievement	387	32.13	4.554		
Self Regulating	Low Achievement	379	26.27	5.427	120.000	0.000 **
	Moderate Achievement	734	27.38	4.904		
	High Achievement	387	31.4	4.505		
Self Questioning	Low Achievement	379	27.86	7.165	100.268	0.000 **
	Moderate Achievement	734	27.74	5.261		
	High Achievement	387	32.45	4.275		
Meta-cognition Inventory Total	Low Achievement	379	123.98	16.556	333.226	0.000 **
	Moderate Achievement	734	136.73	21.464		
	High Achievement	387	160.36	20.015		

Note: ** = Significant at 0.01 level

The table above shows the mean values, f – values and P – values of different meta-cognitive dimensions among Class IX students with different achievement levels (low, Moderate and high). The f – value of meta-cognitive dimension Planning is 244.577 and P – value is 0.000. For Monitoring, the f – value is 263.579 and P – value is 0.000. For Evaluating, the f – value is 218.632 and P – value is 0.000. The f – value of dimension, Self Regulating is 120.000 and P – Value is 0.000. For Self Questioning, the f – value is 100.268 and P – value is 0.000. the P – Values of all the dimensions is less than 0.01. Finally, for meta-cognitive inventory score the f – value is 333.226 and P – value is 0.000 which is also less than 0.01. This shows that there is an overall significant difference in meta-cognitive inventory among students belonging to different achievement levels.

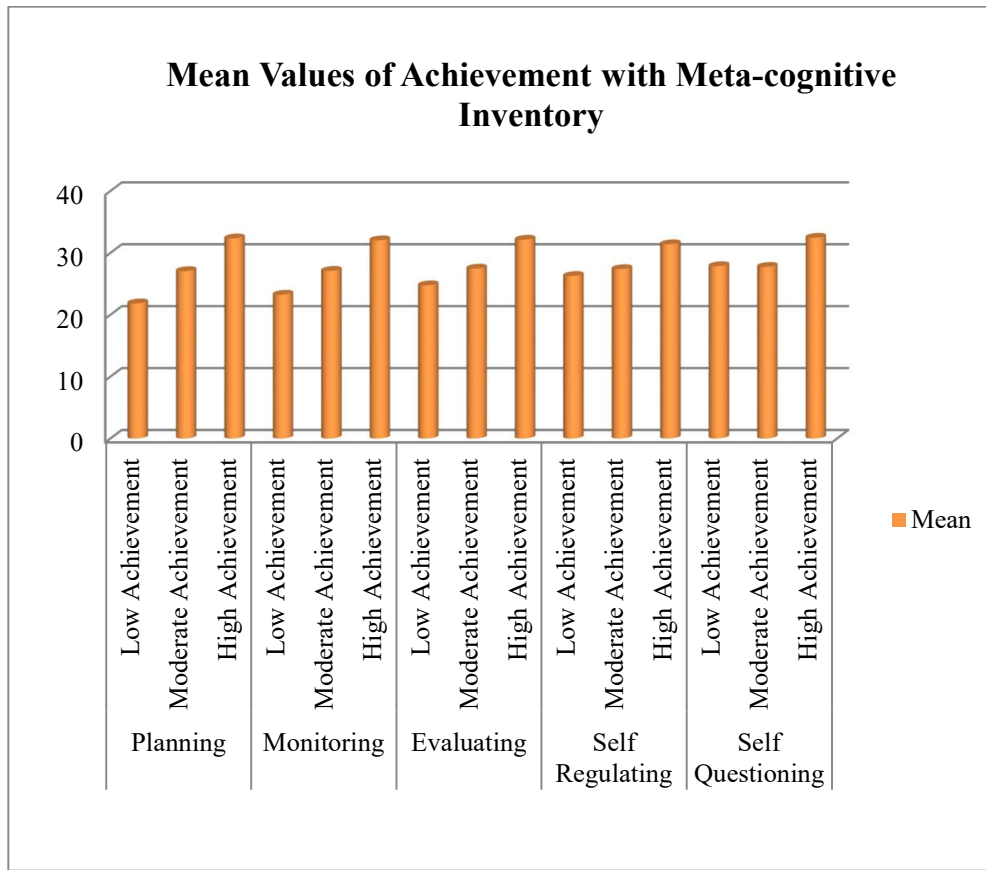


Fig No. 1 Mean Values of Achievement with Meta-cognitive Inventory

On a whole, it was observed that there is significant difference in achievement with all the meta-cognitive skills namely, planning, monitoring, evaluating, self regulating and self questioning at 0.01 as their significant difference is less than 0.01.

Table No. 2 Significant difference between Birth order with Meta-cognition Inventory

Meta-cognition Inventory	Birth Order	N	Mean	Std. Deviation	f - value	P - value
Planning	1 st	756	27.20	7.57	3.193	0.023 *
	2 nd	602	27.33	7.55		
	3 rd	128	25.94	7.40		
	4 th	14	22.21	7.66		
Monitoring	1 st	756	27.55	6.09	2.811	0.038 *
	2 nd	602	27.48	6.22		
	3 rd	128	26.45	6.55		



	4 th	14	23.79	4.63		
Evaluating	1 st	756	28.11	5.56	1.751	0.155 @
	2 nd	602	28.05	5.67		
	3 rd	128	27.20	5.97		
	4 th	14	25.71	5.46		
Self Regulating	1 st	756	28.35	5.19	2.087	0.100 @
	2 nd	602	28.11	5.34		
	3 rd	128	27.19	6.01		
	4 th	14	26.71	4.45		
Self Questioning	1 st	756	29.13	5.87	1.693	0.167 @
	2 nd	602	29.03	5.96		
	3 rd	128	28.22	6.06		
	4 th	14	26.50	8.04		
Meta-cognition Inventory Total	1 st	756	140.35	23.72	3.647	0.012 *
	2 nd	602	139.99	23.72		
	3 rd	128	134.98	26.17		
	4 th	14	124.93	19.36		

Note: * = Significant at 0.05 level

@= Not Significant

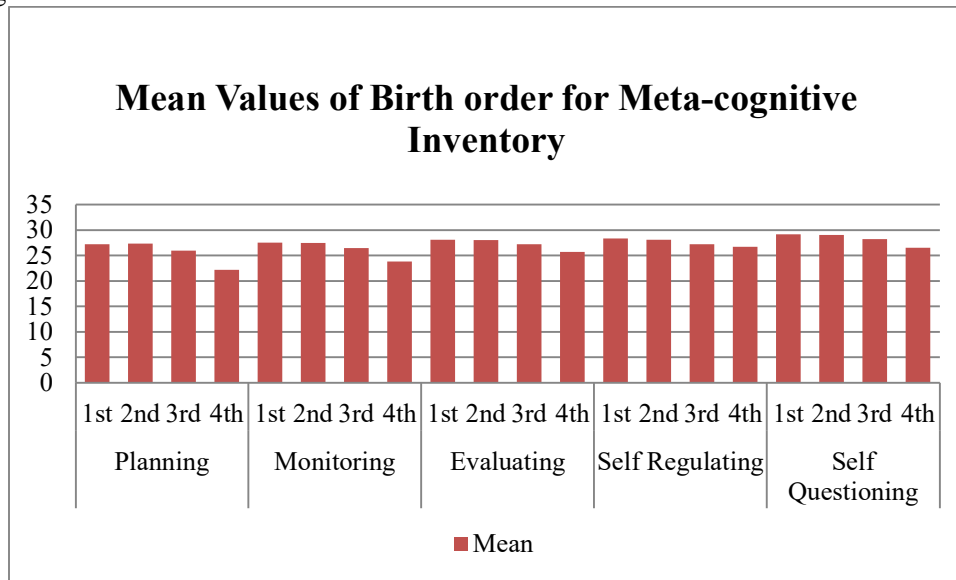


Fig No. 2 Mean Values of Birth order for Meta-cognitive Inventory



The table above shows the mean values, f – values and P – values of different meta-cognitive dimensions among Class IX students belonging to varied birth order (1, 2, 3 and 4). The f – value of meta-cognitive dimension Planning is 3.193 and P – value is 0.023 which is less than 0.05. For Monitoring, the f – value is 2.811 and P – value is 0.038 that is less than 0.05. For Evaluating, the f – value is 1.751 and P – value is 0.155 and is greater than 0.155. The f – value of dimension, Self Regulating is 2.087 and P – Value is 0.100, it is greater than 0.05. For Self Questioning, the f – value is 1.693 and P – value is 0.167, which is greater than 0.05. Lastly, for meta-cognitive inventory score the f – value is 3.647 and P – value is 0.012 which is less than 0.05. This shows that there is an overall significant difference in meta-cognitive inventory among students belonging to different birth order.

Therefore, it was observed that there is no significant difference in birth order for meta-cognitive dimensions Evaluating, Self Regulating and Self questioning. The dimensions planning and monitoring are found to have significant difference at 0.05 and their values is less than 0.05.

Table No. 3 Significant difference between Accommodation with Meta-cognition Inventory

Meta-cognition Inventory	Accommodation	N	Mean	Std. Deviation	t-value	p value
Planning	Day Scholar	1370	27.26	7.64	2.645	0.008 **
	Hosteller	130	25.42	6.57		
Monitoring	Day Scholar	1370	27.55	6.20	3.190	0.001 **
	Hosteller	130	25.75	5.70		
Evaluating	Day Scholar	1370	28.14	5.67	3.383	0.001 **
	Hosteller	130	26.39	5.05		
Self Regulating	Day Scholar	1370	28.27	5.33	3.231	0.001 **
	Hosteller	130	26.70	5.02		
Self Questioning	Day Scholar	1370	29.09	6.00	2.139	0.033 *
	Hosteller	130	27.92	5.30		
Meta-cognition Inventory Total	Day Scholar	1370	140.31	24.12	3.708	0.000 **
	Hosteller	130	132.18	21.04		

Note: ** = Significant at 0.01 level
 * = Significant at 0.05 level

The table above denoted the significant difference in meta-cognitive inventory among Class IX students living in different set of accommodations using t – test analysis. For Planning, the obtained t-value is 2.645 with a p-value of 0.008, which is less than 0.01. For Monitoring, the t-value is 3.190 and the p-value is 0.001, which is less than 0.01. For Evaluating, the t-value is 3.383 and the p-value is 0.001, which is less than 0.01. For Self Regulating, the t-value is 3.231 with a p-value of 0.001, which is also less than 0.01. For Self Questioning, the t-value is 2.139 and the p-value is 0.033, which is less than 0.05. Lastly, for the total met-cognitive score, the t-value is 3.708 and the p-value is 0.000, which is less than 0.01. This shows that there is an overall significant difference in meta-cognitive skills among students living in different accommodations.



Overall, it was observed that there is significant difference in accommodation for meta-cognitive skills namely, planning, monitoring, evaluating and self regulating at 0.01 as their significant difference is less than 0.01. The dimension self questioning is the only skill that shows significant difference at 0.05.

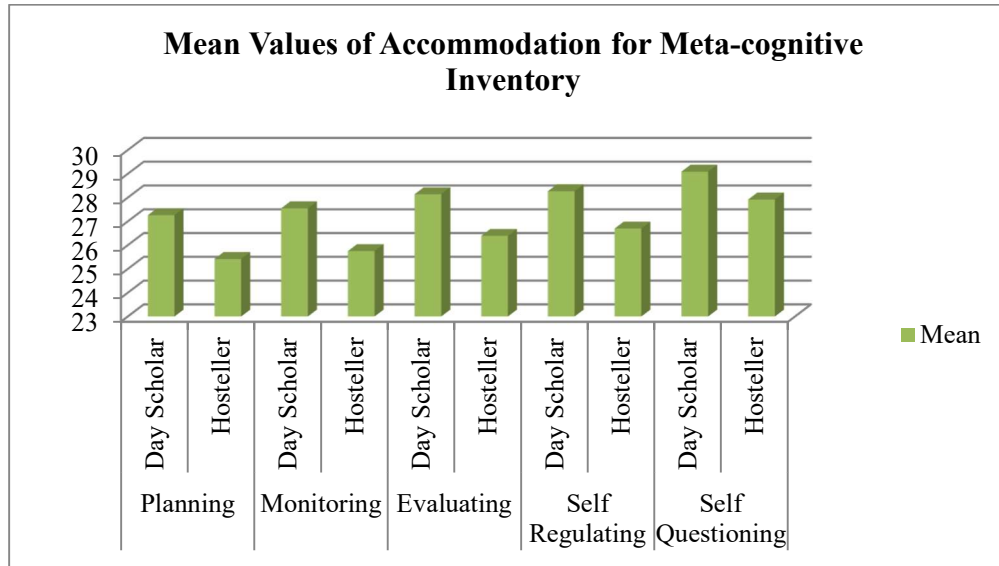


Fig No. 3 Mean Values of Accommodation for Meta-cognitive Inventory

FINDINGS

- There is significant relationship between meta-cognitive skills and achievement in English among IX class students.
- There is significant difference in meta-cognitive skills among IX class students with respect to their birth order.
- There is significant difference in meta-cognitive skills among IX class students with respect to whether they are day scholars or hostellers.

CONCLUSION

The study clearly shows that meta-cognitive skills play an important role in students' academic performance, especially in learning English. Students who are better at planning, monitoring, and evaluating their learning tend to perform better academically. Differences in meta-cognitive skills were observed based on factors like birth order and accommodation, indicating that personal and environmental factors also influence how students learn.

Overall, the findings suggest that encouraging students to become more aware of their thinking and learning strategies can significantly improve their academic outcomes. Teachers should focus on developing meta-cognitive skills in the classroom by guiding students to reflect on their learning, use effective strategies, and evaluate their progress. Strengthening these skills can help students become more independent, confident, and successful learners.

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