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IMPACT OF USES OF METACOGNITIVE INSTRUCTIONAL STRATEGIES TO EXCEL IN COMPETITIVE EXAMINATIONS AMONG UNDERGRADUATE STUDENTS

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ABSTRACT
Metacognition in competitive examination involves and processes that developing students' self-awareness and self-regulation while attempting questions. Metacognition enables the students to facilitate and reflect on their learning in order to enable themselves to improve or to make any changes to their examinations. In particular, learning activities, especially in the 21st century, do not merely involve the transfer of knowledge and then applying that knowledge into daily life, but students need to reflect, plan and evaluate learning outcomes to enhance their competitive examinations. The investigator used quasi experimental method and convenient sampling technique for selecting the sample and samples consists of 168 undergraduate students studying in Periyar University affiliated colleges of arts and science. Use of Metacognitive instructional strategies scale was used, this is containing five dimensions like metacognitive task analysis, metacognitive instructional objective, metacognitive preparation, metacognitive evaluation, metacognitive reflection and its reliability value was 0.896. The major findings of the study shows that undergraduate students differ significantly in their use of metacognitive instructional strategies ($t=59.307$, $p<0.001$) from pre-test and the post-test at 0.01 level of significance. The mean score of the post-test ($M=174.84$) is greater than that of pre-test ($M= 53.91$). It is note that the experimental method could even enhance use of metacognitive instructional strategies among undergraduate students. Further undergraduate students differ significantly between the pre-test and post-test in their use of metacognitive instructional strategies to excel in competitive examinations.

KEYWORDS: *Competitive examination, metacognition, metacognitive instructional strategies, Undergraduate students, regulation and evaluation.*

INTRODUCTION

Metacognition involves wondering one's thinking, or knowledge, with the goal of enhancing learning (Conyers, 2018). instructional theory and analysis in metacognition are predicated on the work of biological process man of science John Flavell explicit that "applied this language in describing the management of information-processing activities that occur throughout psychological feature transactions". "Metacognition refers, to the active watching and resultant regulation and orchestration of those processes typically in commission of some concrete goal or objective" (Donna Wilson and Marcus Conyers, 2016). Metacognition involves being and up to speed of one's psychological feature abilities: Metacognitive information includes information about oneself as a student and therefore the factors that may impact performance, information concerning ways, and information concerning once and why to use ways. Metacognitive regulation is that the watching of one's knowledge and includes coming up with activities, awareness of comprehension and task performance, and analysis of the efficaciousness of watching processes and techniques (Eslami Sharbabaki H, 2013).

Metacognition is a necessary, however usually deserted, element of a twenty first century education that teaches students a way to learn (Donna Wilson and Marcus Conyers, 2016) from educational institution through high school, the academic schedule is jam-pawncked with content lessons with very little time for guiding students in developing the metacognitive and psychological feature skills that may facilitate them stand out within the schoolroom and within the operating world. despite the fact that the program and skilled development could cowl instruction on psychological feature methods, the daily agenda might not give the apparent teaching

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and focused apply students have to be compelled to find out how, when, where, and why to use these methods effectively. the idea seems to be either that kids hit college naturally equipped with the power to be told or that they're going to selection up these skills on their own within the course of learning a way to scan, write, and do arithmetic, science, and social studies. Spreading this assumption, students WHO don't develop thinking and learning skills on their own square measure usually discharged as having restricted learning potential (Donna Wilson and Marcus Conyers, 2016).

WHY METACOGNITION IS IMPORTANT?

The traditional stress on material knowledge-with very little or no time assigned to show metacognitive and psychological feature strategies-may not sufficiently prepare students for faculty and career (http://www.ascd.org/publications/books/117002/chapters/The-Case-for-Teaching-for-and-with-Metacognition.aspx). A report from the National analysis Council on "Education for all times and Work" (Pellegrino & Hilton, 2012) identifies 3 domains of twenty first century competencies, psychological feature (thinking and reasoning), intrapersonal (regulating one's behaviors and emotions to attain goals), and social (relating to others and understanding others' points of view)-that square measure supported by several of the psychological feature assets featured during this text (Donna Wilson and Marcus Conyers, 2016).

No longer is it enough to demonstrate an understanding of the info or to understand the way to use basic learning skills. Rather, students should be able to deploy content data and apply thinking methods fittingly on their own in new learning things. In short, they'll enjoy "the full vary of metacognitive methods to watch and direct their thinking and learning" (National Governors Association Center for Best Practices & Council of Chief State college Officers, 2010a, p. 4). As Billings and Roberts note in instructional Leadership, the Common Core State Standards emphasize the event of ability to support freelance learning and faculty and career readiness and "assume that academics square measure ultimately teaching students to suppose the foremost troublesome and necessary accomplishment skill of all". Metacognition is at the center of our approach to learning and teaching students to suppose.

Mia Maric & Marija Sakac (2018) investigated the metacognitive parts as predictors of educational institution children's performance in problem-solving tasks. The queries were asked by the investigator throughout the method of children's problem-solving. youngsters were inspired by the researchers to suppose aloud and verbalize their thoughts. The seven auxiliary queries that the kids were asked were: one. What area unit you doing now?, 2. however have you ever done that?, 3. What area unit you about to do next?, 4. Why have you ever chosen this action?, 5. What helps you in finding this task?, 6. What disturbs you in finding this task?, and 7. are you able to attempt to do one thing else?.

Victoria Bonnett, Nicola Yuill & Amanda Carr (2017) discussed to encourage the children to persevere and seek understanding during the formal mathematics sessions, each child was given a "Helping Hints" card with specific actions to encourage perseverance. These were focused on the process of problem-solving:

1) I can read through the problem again
2) I can find something in the classroom to help me.
3) I can listen to my partner's ideas.
4) I can think about similar problems I have solved

REVIEW OF RELATED LITERATURE

Asha Lukman et.al (2022) studied teacher collaborative metacognitive feedback as the application of teacher leadership concept to scaffold educational management students' metacognition. This mixed-method study conducted a quasi-experimental method by involving EM students. This study revealed that TCMF positively and significantly affected EM students' metacognition. TCMF contributed to EM students' metacognition better than ITMF did. The students perceived that TC developed their collaborative skills, continuously supporting their critical thinking skills, intercultural communicative competence, and problem-solving skills.

Sulaiman Tajularipin et.al (2021) studied primary science teachers' perspectives about metacognition in science teaching. This study attempts to gain the perspective and implementation of metacognition skills in teaching science in the primary school classroom. The data was collected through a qualitative research method based on interviews with six science teachers in primary school using semi-structured interview protocol. Hence, the understanding of science teachers in regards to metacognition in science teaching is important and gives a positive impact towards teaching and learning in primary science teaching.

Stringer Thomas and Looney Kathy (2021) investigated the role of metacognition in mindfulness interventions with Japanese EFL university students. Results of the current study were not significant. However, this study represents an important step in terms of investigating mechanisms of change in educational practices.

Dezhbankhan Fariba et.al (2021) examined the impacts of Metacognition Management System (MMS) training course on metacognitive competencies. The large effect size ("Partial n[superscript 2 = 0.939," 95% confidence interval) implied that MMS

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training course has a statistically significant impact on metacognitive competencies. This study has implications for further theoretical and experimental researches on the configuration and application of the MMS as well as designing multidimensional metacognitive intervention.

Çetin, Baris (2021) studied the factors affecting the general academic achievement of university students: gender, study hours, academic motivation, metacognition and self-regulated learning. A significant relationship between the university students' self-regulated learning, metacognition and academic motivation scores, and their grade point averages (GPAs) was found. It was also determined that the total scores related to the university students' self-regulated learning.

Naufal, Muhammad Ammar et.al (2021) studied the effectiveness of infusion of metacognition in van hiele model on secondary school students' geometry thinking level. The result revealed the significant difference between the final geometry thinking level in both groups. Thus, it can be concluded that the geometry learning strategy based on the infusion of metacognition in van Hiele model is more effective in improving the student's geometry thinking level than the geometry learning strategy based on van Hiele model.

Wang Li-Chih, Li Xiaomin, Chung Kevin Kien Hoa (2021) examined the relationships between test anxiety and metacognition in Chinese young adults with and without specific learning disabilities. Structural equation modeling analyses showed that test anxiety among Chinese adolescents was linked to literacy difficulties but that only high-functioning and typically functioning students with SpLDs experienced a direct effect (without mediation by other factors). For those without SpLDs, the influence of test anxiety on literacy difficulties was not direct but significantly mediated by metacognition.

Hidayat Riyan et.al (2021) studied the interrelationships between metacognition and modeling competency: the moderating role of the academic year. Our findings confirmed the direct correlation between metacognition and mathematical modeling was statistically significant. Academic year level as a partial moderator significantly moderates the interrelationships between the metacognitive strategies and mathematical modeling competency. The effect of metacognition on mathematical modeling competency was more pronounced in the year two group compared to the year one and three groups.

OBJECTIVE OF THE STUDY

- To find out the impact of use of metacognitive instructional strategies to excel in competitive examination among undergraduate students.
- To find out if there is any significant difference between pre test and post test scores of use of metacognitive instructional strategies among undergraduate students with respect to their locality.

HYPOTHESES OF THE STUDY

For the accomplishment of the objectives, the following hypotheses are formulated for testing.

$H_0$1: There is no significant difference between pre test and post test scores of uses of metacognitive instructional strategies and its dimensions among undergraduate students.

$H_0$2: To find out if there is any significant difference in the pre test scores of use of metacognitive instructional strategies among undergraduate students with respect to their locality.

$H_0$3: To find out if there is any significant difference in the post test scores of use of metacognitive instructional strategies among undergraduate students with respect to their locality.

METHOD OF THE STUDY

The method selected for this study was quasi experimental method of investigation. The population of this study undergraduate students in Salem district. The sample of this study consisted of 168 students from undergraduate students studying in Periyar University affiliated colleges of arts and science. The data required for this study was collected by the use of questionnaire; it was a selfmade test for the students (Use of Metacognitive Instructional Strategies Tool). In the present study the alpha coefficient of internal consistency reliability for Use of Metacognitive Instructional Strategies was 0.896.

DATA ANALYSIS AND FINDINGS

Hypothesis-1 There is no significant difference between pre test and post test scores of uses of metacognitive instructional strategies and its dimensions among undergraduate students.

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Table-1
Pre Test and Post Test Comparisons of Mean Score of Uses of Metacognitive Instructional Strategies and its Dimensions

Variables	Mean	N	S D	r-value	t-value	p-value
MTA Pre Test	10.77	168	2.104	0.106	13.030	0.000**
MTA Post Test	14.77	168	3.608			
MIO Pre Test	10.86	168	2.109	0.047	13.061	0.000**
MIO Post Test	15.00	168	3.630			
MP Pre test	10.76	168	2.097	0.157	14.293	0.000**
MP Post test	15.56	168	3.496			
ME Pre test	10.72	168	2.070	0.052	8.752	0.000**
ME Post test	13.90	168	4.337			
MR Pre test	10.80	168	2.207	0.059	8.018	0.000**
MR Post test	13.46	168	3.575			
MIS Pre Test Total	53.91	168	4.676	0.167	59.307	0.000**
MIS Post Test Total	174.84	168	26.802			

**-Significant at 5% and **-Significant at 1%*

In order to analyse the differences in the mean scores of pre - test and post - test use of metacognitive instructional strategies score and paired 't' test was used by the investigators. From the table-1 the 't' test analysis indicates that undergraduate students (N=168) differ significantly in their Use of metacognitive instructional strategies (t=59.307, p<0.001) from pre-test and the post-test at 0.01 level of significance. The mean score of the post-test (M=174.84) is greater than that of pre-test (M= 53.91). It is note that the experimental method could even enhance use of metacognitive instructional strategies among undergraduate students. Further undergraduate students differ significantly between the pre-test and post-test in their Metacognitive Task Analysis (t=13.030, p<0.01), Metacognitive Instructional Objective (t=13.061, p<0.01), metacognitive preparation (t=14.293, p<0.01), metacognitive evaluation (t=8.752, p<0.01), and metacognitive regulation (t=8.018, p<0.01), at 0.01 level of significance. These results also indicate that a significant correlation exist between the pre-test and the post-test in Use of Metacognitive Instructional strategies and its dimensions. It can also be observed from the fig. 1.1 that there is a slight increase of scores in the post-test in use of Metacognitive instructional strategies and its dimensions from the pre-test.

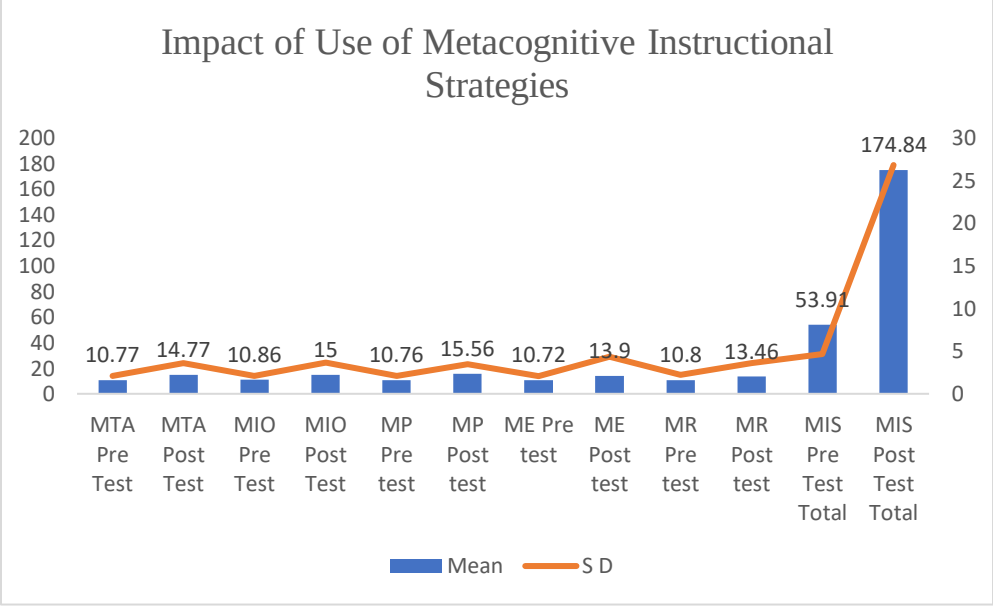

Figure 1.1 Showing Impact of Use of Metacognitive instructional strategies and its dimensions scores of pre-test and post-test.
[Locality]

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Hypothesis-2 There is no significant difference in the pre test scores of uses of metacognitive instructional strategies among undergraduate students with respect to their locality.

Table-2
Significance Difference in the Pre Test Scores of Uses of Metacognitive Instructional Strategies among Undergraduate Students with respect to their locality

Pre Test	Locality	N	Mean	SD	t-value	P-value
MTA	Rural	117	10.71	2.072	0.587	0.559
	Urban	51	10.92	2.189		
MIO	Rural	117	10.93	2.164	0.716	0.475
	Urban	51	10.69	1.985		
MP	Rural	117	11.00	2.125	2.238	0.021*
	Urban	51	10.22	1.942		
ME	Rural	117	10.92	2.077	1.969	0.042*
	Urban	51	10.25	1.998		
MR	Rural	117	10.89	2.177	0.796	0.428
	Urban	51	10.59	2.282		
MIS Total	Rural	117	170.62	26.979	3.322	0.001**
	Urban	51	184.51	23.953		

**-Significant at 5% and **-Significant at 1%*

It is inferred from the above table, since p values are greater than 0.05, the null hypothesis is accepted at 5% level of significance in the pre test scores of uses of metacognitive instructional strategies' dimensions metacognitive task analysis, metacognitive instructional objectives and metacognitive reflection. Hence it is concluded that there is no significant difference in the pre test scores of the dimensions metacognitive task analysis ($t=0.587$, $p>0.05$), metacognitive instructional objectives ($t=0.716$, $p>0.05$), and metacognitive reflection ($t=0.796$, $p>0.05$) of undergraduate students with regard to locality.

since p values are less than 0.05, the null hypothesis is not accepted at 5% level of significance in the pre test scores of uses of metacognitive instructional strategies' dimensions metacognitive preparation, metacognitive evaluation and overall use of metacognitive instructional strategies. Hence it is concluded that there is significant difference in the pre test scores of the dimensions metacognitive preparation ($t=2.238$, $p<0.05$), metacognitive evaluation ($t=1.969$, $p<0.05$), and overall use of metacognitive instructional strategies ($t=3.322$, $p<0.05$) of undergraduate students with regard to locality.

Hypothesis-3 There is no significant difference in the post test scores of uses of metacognitive instructional strategies among undergraduate students with respect to their locality.

Table-3
Significance Difference in the Post Test Scores of Uses of Metacognitive Instructional Strategies among Undergraduate Students with respect to their locality

Post Test	Locality	N	Mean	SD	t-value	P-value
MTA	Rural	117	14.35	3.763	2.538	0.012*
	Urban	51	15.75	3.039		
MIO	Rural	117	14.40	3.712	3.600	0.000**
	Urban	51	16.37	3.046		
MP	Rural	117	15.01	3.604	3.463	0.001**
	Urban	51	16.82	2.889		
ME	Rural	117	13.34	4.404	2.681	0.009**
	Urban	51	15.18	3.928		
MR	Rural	117	13.04	3.517	2.337	0.022*
	Urban	51	14.43	3.551		
MIS Total	Rural	117	54.45	4.750	2.400	0.018*
	Urban	51	52.67	4.293		

**-Significant at 5% and **-Significant at 1%*

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since p values are less than 0.05, the null hypothesis is not accepted at 5% level of significance in the post test scores of uses of metacognitive instructional strategies' dimensions metacognitive task analysis, metacognitive instructional objective, metacognitive preparation, metacognitive evaluation, metacognitive reflection and overall use of metacognitive instructional strategies. Hence it is concluded that there is significant difference in the post test scores of the dimensions metacognitive task analysis ($t=2.538$, $p<0.05$), metacognitive instructional objective ($t=3.300$, $p<0.05$), metacognitive preparation ($t=3.463$, $p<0.05$), metacognitive evaluation ($t=2.681$, $p<0.05$), metacognitive reflection ($t=2.337$, $p<0.05$), and overall use of metacognitive instructional strategies ($t=2.400$, $p<0.05$) of undergraduate students with regard to locality.

FINDINGS AND CONCLUSION

The study found that undergraduate students differ significantly in their use of metacognitive instructional strategies from pre-test and the post-test at 0.01 level of significance. The mean score of the post-test is greater than that of pre-test. It is note that the experimental method could even enhance use of metacognitive instructional strategies among undergraduate students to excel in their competitive examination. Another finding shows that there was a significant difference in the post test scores of uses of metacognitive instructional strategies among undergraduate students with respect to their locality. Many psychologists believe that metacognitive plays a vital role in learning. If that's the case, in institutes of higher education where students are expected to be self-directed in their learning, cognition becomes an essential element. Therefore, this study will facilitate students to control their learning behavior and to require responsibility for his or her own learning. Also, they need to form selections in such how which can facilitate them to accomplish their competitive examination learning tasks. So, the extent of metacognition could play a vital role in the manner they attend to those learning. Also, this study is important as it addresses educators, teachers, and parents about improving students' competitive skill through metacognitive way to implement the learning process.

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