Role of Metacognitive Self Regulation and Academic Locus of Control in Academic Performance

Darshini Madanagopal[1]
S.Thenmozhi[2]

Abstract:

Numerous factors have been identified as predictors of Academic performance of students. Among these factors, Locus of control has been established to be strongly related to Academic success. However, the exact nature of this relationship is not fully explained. The aim of the present study was to examine the relationship between Academic Locus of control and Academic performance and the mediating role of Metacognitive self regulation. Data from 181 students University students was collected. The Academic Locus of Control Scale and the Self Regulation subscale of the Metacognition Awareness Inventory was used to quantify the Academic Locus of Control and Metacognitive Self Regulation respectively of the students. Data was analysed using regression and correlation analysis. The results indicate that Metacognitive self regulation partially mediates the relationship between Academic Locus of Control and Academic performance. Students who had high Internal Locus of control, more actively used metacogntive strategies in their learning process and this was reflected in their academic performance.

Keywords: *Metacognitive regulation, Academic Locus of Control, Academic performance*

I. INTRODUCTION

Background:

In an increasingly competitive world, students are pressured into being more academically successful. Educational psychologists and theorists of learning have discussed the varied factors influencing academic performance and the path to academic success. However, factors affecting academic performance can be both academic and non-academic. Many personality traits of the students can influence the way in which they pay attention in class, dedicate time and effort to academics, prioritize studies and keep themselves academically motivated. For the present study, Academic Locus of control and Metacognitive regulation were selected as variables to be studied in relation to the way in which students perform academically.

1) Academic Locus of Control and Academic performance

Locus of control is an individual's belief system regarding the causes of his or her experiences and the factors to which that person attributes success or failure. Numerous studies have already established the link between Locus of control and Academic performance and success (Dubey & Nayyar ,2016; Mathur, 2014). Jones, Slate and Marini (1995) and Onwuegbuzie and Daley (1998) also found a relationship between Locus of Control and study skills. These studies showed that those with very good study skills tended to have an internal academic Locus of Control. Students who have an external locus of control, might attribute low grades to unfair grading procedures by the teachers or any other external event. Such students might not learn from their mistakes as they do not take responsibility to the events that led them to that situation. Students with internal locus of control, on the other hand, believe that academic success or failure is a direct result of

their own actions which they are capable of controlling to a certain extent. In the present study Academic Locus of Control has been operationally defined as, "The degree to which students attribute their academic performance to internal or external sources".

2)MetacognitiveSelf Regulation and Academic performance Metacognitive regulation describes how learners monitor and control their cognitive processes (Nelson &Narens, 1990). Learners who are more aware of and actively regulate their cognitive processing during the learning process would perform better academically. Self-regulated learners take control of their learning and have a variety of strategies that promote regulating such as planning and self-monitoring. Self-regulated students are agents and agents are purposeful in their pursuit of learning (Winne, 2004). Earlier studies by Gaythwaite (2006) have substantiated these ideas with empirical results.

3)Academic Locus of Control and Metacognitive Self Regulation

It can be argued that students with internal locus of control, would have higher levels of self regulation as they believe that by self regulating they can control their own destiny. For this reason they would generally use cognitive and metacognitive strategies more frequently, further test the development of their own knowledge and skills, and become more successful. Such Metacognitive strategies include Metacognitive regulation. Metacognitive regulation corresponds to awareness of the way students plan, implement strategies, monitor, correct comprehension errors, and evaluate their learning.

[1] Ph.D. Research Scholar, Dept. of Counselling Psychology, University of Madras
[2] Associate Professor and Headi/c, Dept. of Counselling Psychology, University of Madras

II. OBJECTIVES

The principle purpose of the study was to investigate the relationship between and Academic Locus of control and Metacognitive Regulation and ascertain their contribution to Academic performance.

III. HYPOTHESES

Based on the objective of the study and previous literature, the following alternate hypotheses were framed.

H_1 There would be a significant relationship between Academic Locus of Control and Academic Performance.

H_2 There would be a significant relationship between Metacognitive Self regulation and Academic Locus of Control.

H_3 There would be a significant relationship between Metacognitive Self regulation and Academic Performance.

H_4 Metacognitive Self regulation would mediate the relationship between Academic Locus of Control and Academic Performance.

IV. METHODOLOGY

The current study was expost facto in design. Non-probability purposive Sampling technique was used to collect the data. The sample included 181 (men=108, women=73) participating students from a University in Chennai City. The students belonged to various fields of education. Mean age of the sample being 21.7 years. Standardised psychological tools, in the form of questionnaires were utilised to quantify data for the variables of interest.

Tools used

The Academic Locus of Control Scale (Akin, 2007): The Academic Locus of Control Scale is a 17 item self-report scale using a 5 point Likert Scale (1= strongly disagree to 5 = strongly agree). This scale consists of two sub-scales: An External academic locus of control (with 11 items) and an Internal academic locus of control (with 6 items). The scale has high established reliability with both temporal reliability and internal consistency.

Self Regulation subscale of the Metacognition Awareness Inventory (Schraw& Dennison, 1994): This tool was used to measure Metacognitive self regulation. The self regulation subscale of the inventory consists of 35 items in the True or False format. The higher the score the higher the level of self regulation.

Academic performance was measured as the final percentage grade awarded to the students at the end of the first year of the course.

Statistical Analysis

Quantitative statistical analysis with inferential statistics was used to analyze the data. Data was checked for missing values and outliers. Tests of normality were applied. As the data is normally distributed, to test the hypotheses, parametric statistics were applied for further analysis including Pearsons Product movement correlation. Linear Regression Analysis

was done between Metacognitive Self regulation& Academic Locus of Control, Metacognitive Self regulation& Academic Performance and Academic Locus of Control & Academic Performance in order to establish zero order relationships among the variables, after which the Baron and Kenny approach (1986), using multiple regression, was used to test if Metacognitive Self regulation mediates the relationship between Academic Locus of Control and Academic Performance.

V. RESULTS AND DISCUSSION

Pearsons Product movement correlation was done in order to establish relationship between Metacognitive Self Regulation, Academic Locus of Control and Academic performance

Table 1: Pearson Correlation Matrix among Metacognitive Self Regulation, Academic Locus of Control and Academic performance

	Internal Academic Locus of Control	External Academic locus of control	Metacognitive Self Regulation	Academic Performance
Internal Academic locus of control	1	-1	.857**	.738**
External Academic locus of control	-1	1	-.251*	-.191*
Metacognitive Self Regulation	.857**	-.251*	1	.608**
Academic Performance	.738**	-.191*	.608**	1

*p < 0.05, **p < 0.01

The correlation analysis showed that there was a statistically significant relationship between all three variables of interest. Thus, Hypotheses 1 to 3 stating that there would be a significant relationship between Metacognitive Self Regulation, Academic Locus of Control and Academic performance are accepted. This was in concurrence with the findings of earlier studies.

Multiple regression analysis was done in for the predictor variables of Academic Locus of Control and Metacognitive Self Regulation on the criterion variable of Academic performance.

Table 2: Multiple Regression Analysis of Metacognitive Self Regulation, Academic Locus of Control on Academic performance

Variables	Academic Performance		
	B	SEB	β
Internal Academic locus of control	0.55	0.18	0.20*
External Academic locus of control	-0.34	0.16	-.17*
Metacognitive Self Regulation	0.64	0.23	.24**
R^2	.16		
F for change R^2	4.48**		

*$p < 0.05$, **$p < 0.01$

The regression analysis found that Academic Locus of Control was a significant predictor of Academic performance. Internal Locus of control was found to be a positive predictor of academic performance and external Locus of control to be a negative predictor of academic performance. Further, Metacognitive Self regulation was found to mediate the relationship between Academic Locus of Control and Academic Performance. Thus, Hypothesis 4 stating that Metacognitive Self regulation would mediate the relationship between Academic Locus of Control and Academic Performance was accepted.

Students with high Internal Academic locus of Control, believe they are responsible for the consequences of their actions, that their academic performance is a direct result of their studying behaviour. Hence, they might be more involved in Metacognitive processes such as Metacognitive Self Regulation, which have already been proven to predict academic success. Students who attribute their academic failures and successes to external factors such as the correcting method of the teachers might not practice higher levels of metacognitive self regulation as they believe the final outcome of their academics is controlled by external factors, anyway.

VI. IMPLICATIONS

A considerable amount of research has been conducted with regard to improving academic performance and specific elements within the areas of learning strategies, affective factors, and learner characteristics. These studies indicate that motivation is central to success, as are characteristics such as goal setting, interaction, enthusiasm, persistence, confidence, and risk taking. Various skills and learning approaches related to metacognition – planning, monitoring, and reflecting – also give learners an advantage. Students who take responsibility for their learning and exhibit self-management characteristics, are active and involved, and practice self-encouragement or positive self-talk are likely to realize success academically. Training to increase Metacognitive awareness among students would go a long way towards this goal.

VII. LIMITATIONS AND SUGGESTIONS

The psychological tests used in the present study were in English. Although all the adolescents who participated in the current study where fluent with the English language, an option to select the medium of language as either English or Tamil could have been considered.

The sample of the study was obtained from one Government University in Chennai city and so the obtained results cannot be generalized. An extension of the study, including students from various other city colleges in different geographic localities could have been conducted.

The sample size of the current size was fairly small and a larger sample size might have provided different statistic results.

VII. REFERENCES

- Akin, A. (2007). Academic locus of control scale: A study of validity and reliability. Cukurova University Journal of Educational Faculty, 34(3), 9–17.

- Baron, Kenny. A.,(1986), "Moderator Mediator Variables Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," Journal of Personality and Social Psychology, 51 (6), 1173–82.

- Dubey, A., & Nayyar, S. (2016). Role of locus of control in academic achievement of science students. International Journal of Education and Management Studies, 6(4), 416.

- Gaythwaite, E. (2006). Metacognitive Self-regulation, Self-efficacy For Learning And Performance, And Critical Thinking As Predictors Of Academic Success.

- Jones, C. H., Slate, J. R. & Marini, I. (1995). Locus of Control, social interdependence academic preparation, age, study time, and the study skills of college students. Research in the Schools, 2, 5-62.

- Keith, T.Z., Pottebaum, S.M. & Eberhrdt, S. 1986. Effects of self-Concept on academic achievement: a large-sample path analysis, Journal of Psycho educational Assessment , 4, pp. 61–72.

- Mathur, R. (2014). Academic achievement of college students and their locus of control.

- Nelson and Narens, T. O. (1990). Metamemory: A theoretical framework and new findings. Psychology of Learning and Motivation, 26, 125–173.

- Onwuegbuzie, A. J. & Daley, C. E. (1998). Study skills of undergraduates as a function of academic Locus of Control, self-perception, and social interdependence. Psychological Reports, 83, 595-598

- Schraw, G. & Dennison, R.S. (1994). Assessing metacognitive awareness. Contemporary Educational Psychology, 19, 460-475

- Winne, P. H. (2004). Putting volition to work in education. Teachers College Record, 106(9), 1879-1887.