METACOGNITION AND SELF- REGULATED LEARNING ON ACADEMIC PERFORMANCE AMONG ADOLESCENTS

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Abstract: *The present study aimed to throw light about metacognition and self-regulated learning on academic performance among adolescents. 100 male and female adolescents in the age group of 15 to 17 were selected through multi stage cluster random sampling. They completed the Self-Regulation Questionnaire (SRQ) devised by Brown, Miller, & Lawendowski (1999), Metacognition inventory developed by Punita Govil (2003), Personnel information schedule devised by author. Aggregate percentage of marks obtained by the respondents in their previous exam was used to obtain the academic performance. The obtained data were analyzed using required statistical tools. The obtained results revealed that there is a positive correlation found between metacognition, self-regulated learning and academic performance. Male adolescents are higher in metacognition than female adolescents. The adolescents in the age 17 are higher in metacognition than adolescents in the age of 15 and 16*

Key Words: *self-regulated learning, academic performance, adolescents*

1. INTRODUCTION:

Adolescents are highly essential for a healthy nation. A nation in order to be economically strong it requires productive individuals. Adolescents are sprouting individuals who are going to act as pillars of the nation. According to WHO "adolescence is a period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19" During adolescence period the individual undergoes lots of biological changes which creates impact on their physical, mental and social well being. In period of time the start searching their identity in various aspects like choosing their educational courses, deciding upon their career. This is also the duration where they undergo lot of hormonal changes.

Thus during the adolescence the students are highly pressurized due to various reasons like changes in their physiology, expectation of the parents to meet out their demands in education and extracurricular activities, peer pressure in adopting certain habits and behaviours. Thus every individual crosses the adolescence period under pressure and stress. Other important aspect which the adolescent has to meet out is their academics. They have to prove themselves capable academically in order to get in the career course of their choice. Thus academic performance plays a vital role during adolescence period. There are various predictors playing role in deciding the academic performance of the students. Few are motivation, aspiration of students, socioeconomic status. Metacognition and self-regulated learning are other two variables which highly influences the academic performance.

Metacognition is an important role in learning and is a one of the strong predictor of academic success (Dunning, Johnson, Ehrlinger and Kruger, 2003). The term metacognition refers to the higher order mental process. Metacognition can be defined as the "awareness and monitoring of one's thoughts and task performance, or more simply, thinking about your thinking" (Flavell, 1979). It helps in making plans for learning, estimating the performance ,using appropriate skills for learning, calibrating the extent of learning and strategies to solve a problem . According to Schraw and Moshman (1995) metacognition comprises of two major components which are metacognitive knowledge and metacognitive regulation. Metacognitive knowledge refers to the knowledge about cognition like knowledge of strategies and skills and the knowledge of how and when to use such skills and strategies. Metacognitive regulation refers to activities which controls one's own thinking and learning such as monitoring ,planning, comprehension, and evaluation (Schraw and Dennison, 1994). It will help the individual to be strategic and help to learn new information rather focusing on information already studied (Everson and Tobias, 1998).

Self-regulated learning is another important predictor in determining the academic performance of an individual. Self-regulated learning is the ability of an individual to understand and control their learning environment. Students with high self-regulated learning were found to be highly successful in achieving their academic goals (Pintrich and De Groot, 1990). Pintrich (2000) defined self-regulated learning as "an active and constructive process whereby students set goals for their learning, and then try to monitor, regulate, and control their cognition, motivation, and behaviour guided and constrained by their goals, and the contextual features in the environment". According to

Zimmerman (2008) self-regulated learning is a proactive process rather a reactive event that happens due to impersonal forces like teaching. Every student may vary in their ability of self-regulated learning and this is a trainable. Thus this study wants to explore about the metacognition and self-regulated learning on academic performance among adolescents.

2. REVIEW OF RELATED LITERATURE:

Sawhney& Bansa (2015), did a study on Metacognitive Awareness of Undergraduate Students in Relation to their Academic Achievement. A sample of 100 students, both boys and girls studying in the 1st year of graduation in different colleges from Chandigarh participated. Random sampling technique was employed to draw the samples. Metacognitive Awareness Inventory (MAI) by Schraw & Dennison (1994) was used as instrument. Academic achievement of the students was taken from their previous class results. Results indicated that academic achievement of girl students was significantly higher than the male students, Girls and Boys are equally aware of their own Metacognitive processes and students with high scores in total dimensions of metacognitive awareness i.e. Knowledge of Cognition, Regulation of Cognition and Total Metacognitive Awareness have scored high in academic achievement.

Kumari & Chamundeswai (2015) investigated the relationship between the parental involvement, self-regulated learning and academic achievement of students. 300 students at higher secondary level were chosen and survey method was employed. The Parental Involvement Inventory by Chopra and Sahoo, Self Regulated questionnaire developed by the author and the marks obtained by the students in their exams were used as instruments. The statistical results showed a significant positive correlation between Parental Involvement, Self-regulated learning and Academic Achievement and significant difference was found between various boards of schools in parental involvement and academic achievement. Both were found better in matriculation and central board students than the state board students.

3. PROBLEM OF THE STUDY:

The present study aimed to investigate the impact of Metacognition and Self-regulated learning on academic performance among Adolescents

4. METHOD AND MATERIALS:
4.1. OBJECTIVES
- To find out the relationship between metacognition, self-regulated learning and academic performance among adolescents.
- To examine whether there is there any significant difference on metacognition among adolescents on the basis of gender.
- To study whether there is any significant difference on metacognition among adolescents on the basis of age.

4.2. HYPOTHESES
- There is a significant relationship between metacognition and self-regulated learning and academic performance among adolescents.
- Adolescents differ in the metacognition on the basis of gender.
- Adolescents differ in metacognition on the basis of age.

4.3. SAMPLING
Respondents were 100 adolescents in the age group of 15 to 17 years studying in the various schools of Puducherry state and it comprised of both male and female 50 in each. Multi stage cluster random sampling technique was adopted for data collection.

4.4. INSTRUMENTS
- The Self-Regulation Questionnaire (SRQ) devised by Brown, Miller, & Lawendowski, 1999 to measure self-regulated learning. The Questionnaire contains 63 items where seven dimensions are measured and the items are positively and negatively framed and are rated on a 5 point Likert scale.
- Metacognition inventory developed by Punita Govil (2003) is a 30 items self report inventory used to assess the level of metacognition. This Inventory is used to measure two important components of metacognition like (a) knowledge of cognition and (b) regulation of cognition
- Aggregate percentage of marks obtained by the respondents in their previous exam was used to obtain the academic performance.
- Personnel information schedule devised by author was used to obtain the demographic details.

5. RESULTS AND DISCUSSION:

Table 1

Correlation coefficient between metacognition, self-regulated learning and academic performance among adolescents

Variable	Metacognition	Self -regulated Learning	Academic Performance
Metacognition	-	.680**	.735**
Self- regulated Learning	.680**	-	.638**
Academic Performance	.735**	.638**	-

** Correlation is significant at the 0.01 level (2-tailed)

Table 1 shows the correlation coefficient between metacognition, self-regulated learning and academic performance among adolescents. From the table it is found that metacognition is positively correlated with self-regulated learning (r= .680), academic performance (r=.735). It is also found that self-regulated learning is positively correlated with academic performance(r=.638). This results lines with the study done by Isaacson & Fujita(2006). When metacognition and self -regulated learning improves it enhances the academic performance.

Table 2

Mean and Standard deviation of metacognition of adolescents on the basis of gender

Gender	N	Mean	Std Deviation	t value	Level of significance
Male	50	95.70	12.11		
Female	50	88.04	13.06	3.03	0.01

Table 2 shows the mean and standard deviation of metacognition of adolescents on the basis of gender. From the table it is found that the obtained mean value and standard deviation value for male is 95.70 and 12.11 and for female is 88.04 and 13.06. The obtained t value 3.03 is significant at 0.01 level . From the mean value it is found that male scored higher and therefore it is inferred that male are higher in metacognition. Therefore the formulated hypothesis that adolescents differ in the metacognition on the basis of gender is accepted.

Table 3

Mean, Standard deviation of metacognition of adolescents on the basis of age

Age	N	Mean	Std Deviation	F value	Level of significance
15	24	86.21	12.91		
16	39	92.64	12.93	3.33	0.01
17	37	94.73	12.62		
Total	100	91.87	13.11		

Table 3 shows the mean and standard deviation of metacognition of adolescents on the basis of age. From the table it is found that the obtained mean value and standard deviation value for the age 15 is 86.21, 12.91, for the age 16 is 92.64, 12.93 and for age 17 is 94.73, 12.62. The obtained F value 3.33 is significant at 0.01 level. From the mean value it is found that the adolescents in the age group of 17 scored higher and therefore they are better in metacognition than adolescents in the age group of 15 and 16. Thus the formulated hypothesis adolescents differ in the metacognition on the basis of age is accepted.

6. FINDINGS:
- There is a positive correlation found between metacognition, self-regulated learning and academic performance.
- Male adolescents are higher in metacognition than female adolescents.
- The adolescents in the age 17 are higher in metacognition than adolescents in the age of 15 and 16.

7. SUMMARY AND CONCLUSION:
The present study aimed to find the impact of metacognition, self-regulated learning on academic performance among adolescents. 100 male and female adolescents in the age group of 15 to 17 completed the Self-Regulation Questionnaire (SRQ) devised by Brown, Miller, & Lawendowski (1999), Metacognition inventory developed by Punita Govil (2003), Personnel information schedule devised by author. Aggregate percentage of marks obtained by

the respondents in their previous exam was used to obtain the academic performance. They were selected through multi stage cluster random sampling .The obtained data were analyzed using required statistical tools.

The obtained results revealed that there is a positive correlation found between metacognition, self-regulated learning and academic performance. This implies that metacognition and self-regulated learning are the important predictor for academic performance. Therefore while considering about academic performance these variables should be looked upon and trained in order to get better academic performance. Male adolescents are higher in metacognition than female adolescents. Therefore female adolescents could be trained more in order to enhance their metacognition. The adolescents in the age 17 are higher in metacognition than adolescents in the age of 15 and 16. Therefore the younger adolescents could be trained more to promote their metacognition. Since there is a positive relationship found between metacognition, self-regulated learning and academic performance teachers and parents should be taught how to make the children as a self-regulated learners and metacognitive thinkers. Because it will subsequently improves the academic performance.

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