Academic Achievement among Secondary School Students in Relation to Meta-Cognitive Skills

Dr. Nimisha Beri[1] and Komal[2]
[1]Professor, Department of Education, Lovely Professional University
[2]Research Scholar, School of Education, Lovely Professional University

Abstract: Present research was conducted to explore the academic performance of the students in relation to their Meta –cognitive skills. Through this research, researcher tried to explore the levels of academic achievement and Meta –cognitive skills among secondary school students with respect to gender and locality related differences. Result shows that secondary school students do not differ in their academic achievement and meta- cognitive skills on the basis of gender and locality. Urban secondary school students possess more meta-cognitive skills than their counterpart's rural secondary school students. There exists significant positive relationship between Meta Cognitive Skills and Academic Achievement among secondary school students.

Keywords: Academic Achievement, Meta Cognitive Skills and Secondary School Students

Introduction

The 21st century has witnessed remarkable changes in the educational system. In educational institution a major responsibility lies on the shoulders of the teachers and parents to meet the demands of the new era. In regular day to day activities a teacher and parent often inculcate thinking skills into the program of study whereby learner can get the knowledge and help to generate a sense of responsibility among them. The current effects of these practices are excellent models for students towards developing thematic units and help them to think more critically about what, why and how they learn. Parents can contribute insights and knowledge for the enhancing the professional skills, for strengthening academic and social programs. Parents' contribution during the school year would definitely make lots of difference among the students. In such case like school general meeting, attending the meeting which is scheduled by their child's teacher, school functions which is considered as important to attend, volunteering in the school, and for the betterment of student serving as the school committee. Present study focuses on investigating into the Meta- cognitive skills and academic achievement among secondary school students. An analysis of review of related research

revealed that academic achievement of under graduates was not explored till date in relation to meta-cognitive skills. It will be very interesting to explore the relationship of academic achievement with parental involvement and Meta cognitive skills, hence this study was undertaken to fill the research gap. Present research will be useful to the parents, teachers as well as stakeholders so, they can implement strategies to make the education system effective. It will help parents, teachers and administrators to optimize the learning of students.

ACADEMIC ACHIEVEMENT

We measure academic achievement through examinations, tests or continuous assessment. Some of the factors, which predict academic performance, are test anxiety, environment, motivation, and emotions. Individual differences influence academic performance, such as differences in intelligence and personality. Krishnan (1977) investigated a study on a sample of 180 students "to explore non-intellectual factors and their influence on academic achievement". It was found that educational status of the parents had a favourable impact on the academic growth of their children.

Cherian (1992) conducted a study on a sample of 369 boys and 652 girls in South Africa, "to investigate the relationship between parental education and academic achievement of students". Findings of the results revealed that parental education had significant impact on and academic achievement of the students. Vijayalakshmi and Natesen (1992) undertook a study on a sample of 100 student of 9th class of Coimbatore. He investigated into the "factors influencing academic achievement of students". Results explored that gender had favourable impact on academic achievement. Girl students were superior in academic achievement than boys.Khare and Garewal (1996) selected a sample from 212 students of middle classes of Bhopal to explore "home environment and academic achievement of elementary school children". The results revealed that boys have better academic achievement than girls.

Sunitha (2005) investigated a study on a sample of 240 students of Dharwal in India to explore "academic learning environment of students from aided and unaided coeducational high schools". It was found that no significant difference exists in academic achievement of boys and girls. It also found that Parental education have positive relationship with academic achievements.

Nuthana (2007) undertook a study on 600 school students of "Karnataka to carry out a gender analysis of academic achievement". It was found that there was no significant difference in

academic achievement in relation to gender. Urban students had higher academic achievement than rural counterparts. Leeson et al. (2008) conducted a study on a sample of 639 students of high schools of New South Wales, Australia to examine "cognitive ability, personality and academic performance". Results explored that Girls performed better than boys and Gender play unique role in predicting academic achievement. Singh and Thukral (2010) undertook a study on a sample of 400 students of high school of 10th class in New Delhi to examine the "relationship of social maturity with academic achievement of high school students". It was revealed that there were no significant differences in the academic achievement of students on the bases of gender and locality. Muller (2018) examined the "relationship of different forms of parent involvement to two measures of academic performance, student grades and scores on achievement tests". Parents' highest education and family income have a strong, positive effect on student grades, as they did for test scores. Social economic status of family has impact on the academic achievement of Children.

META COGNITIVE SKILLS

According to encyclopedia Meta Cognitive Skills is way of thinking about thinking or knowing about knowing. The "Meta" comes from the root of the word and it denote as beyond. The thinking level is the highest in Meta cognitive skills which enables perceptive of analysis, and processes to manage of the one's cognation, particularly students were engaged in learning.

Meta-Cognition is defined as think about thinking; and it can be divided into three major strategies. Meta cognitive learning activities engross students in challenging tasks and it creates a room for students to discuss, debate new ideas, and assess and set targets for learning. The self-monitoring, self-regulation, and use of meta cognitive strategies are the process-based component which emphasizes the knowledge of application. Above all it enables them to attempt to excel in their areas of responsibility and acts as a viable tool for self-directed learning (Okoro, 2011). Planning, Monitoring and Evaluating are the basic Meta cognitive strategies that help to promote of thinking creativity which is the priority of educational program. (Salmon,2008). Meta Cognitive environment encourages the self-regulation and self-direction which can be considered the critical ingredients to successful learning. The awareness of learning and the self-regulated activity of the learners in a learning process are shaped by the cognitive skills and strategies used by the learners (Wernke et al. 2011).

Kim et. al. (2008) conducted study on "using meta-cognitive strategies in game based learning". The researcher found out that a marketable game playing in combination with meta-cognitive strategies has ample positive impact to increase students' in term of learning and by playing game which help them involved actively. However, activities like talking and observation even modelling are more effective than writing activities whereby enhancing the students' achievements in learning. Shamir et. al. (2008) found significant differences between Meta cognition behaviour in individual learning and paired learning. Lavinia and Liliana (2011) found that in "general both boys and girls utilized their Meta Cognitive skill in effective learning". The author found out significant differences between the genders. The result was exclusively on the following dimensions, the performance of prior knowledge planning, problem solving, weaknesses and strengths of intellectual about one's own knowledge, the process of different strategies and monitoring of learning.

Koedinger. R et. al (2011) found that "Meta Cognitive feedback helped students to acquire better skills to transfer to learn innovative domain level content during the intervention, rather than help or looking for support was found no longer in effect". Greer (2013) conducted study on Meta cognition and the music lesson. Researcher concluded that, teaching and learning meta-cognitive strategies benefit students learning, it is usually believed in education system that students who learn to think can do well and achieve the goals and can learn anything which acquired knowledge. The students who were learnt to think Meta cognitively show significant progress in their talent to evaluate performances. Mahadi (2013) investigated that, "Meta-Cognitive is the strategy that students use to deals with learners' existing knowledge and experiences which can provide teachers or instructors with clear precise guidelines on how learners can develop their autonomy in language learning". Learners enrich with adequate learning strategy to enlarge autonomous learning and become more flourishing in their learning.

Yadava & Yadava (2018) conducted a study on "cognitive predictors of academic achievement in secondary school". Data was collected from 100 students studying in middle schools. The result of the study revealed that dimension of executive function, motivation, organization (executive functions) and information management (Meta Cognition) were the strongest predictor of academic performance.

OBJECTIVES

1. To study the levels of meta-cognitive skills among secondary school students.

2. To study the gender and locality related differences in meta-cognitive skills among secondary school students.

3. To analyze the inter-relationship among academic achievement and meta-cognitive skills of secondary school students.

METHODOLOGY

Descriptive method of research was used in the present study. Convenient sampling technique was used to select a sample of 200 secondary school students. For the collection of data the investigator used "Meta Cognitive Skills" tool developed by Dr. "Punita Govil"(2003).

ANALYSIS AND INTERPRETATION

The analysis of data, interpretation of results is organized asfollows:

Results Pertaining to Levels of Meta Cognitive Skills among Secondary School Student

To find out results pertaining to levels of meta cognitive skills among secondary school students, data were analyzed and organized in table 1:

Table 1: Levels of Meta Cognitive Skills among Secondary School Students

Mata Cognitive Skills	Score	Number of Students	Percentage
Very High	107 and above	24	12.00%
High	95-106	51	25.50%
Average	82-94	33	16.50%
Low	70-81	39	19.50%
Very Low	69 and below	53	26.50%
TOTAL		200	100.00%

It is obvious from Table 1 that 12% students possess very high, 25.50% students possess high, 16.50% students possess average, 19.50% students possess low, and 26.50% students possess very low level of meta cognitive skills.

Gender Related Differences among Secondary School Students in their Meta Cognitive Skills

To find the difference between secondary school boys and girls in their Meta cognitive skills; Mean scores, SDs and t-value was calculated and organized in table 2.

Table 2: Difference between Secondary School Boys and Girls in Meta Cognitive Skills

Variable	Gender	N	M	SD	df	t-value
Meta Cognitive Skills	Boys	92	85.33	17.88	198	1.00 NS
	Girls	108	82.66	19.67		

NS Not Significant at .05level

Above table shows that mean score of secondary school boys is 85.33; mean score of girls is 82.66, the SD of secondary school boys is17.88 and SD for secondary school girls is 19.67. For meta cognitive skills, the t-value for difference between secondary school boys and girls is 1.00, which is insignificant at 0.05 level. Hence, it may be interpreted that there exists no significant difference between secondary school boys and girls in their meta cognitive skills. Thus, the hypothesis that there exists significant difference between secondary school boys and girls in their meta cognitive skills, was rejected.

Locality Related Differences among Secondary School Students in their Meta Cognitive Skills

To find the difference between rural and urban secondary school students in their meta cognitive skills; relevant statistical data is organized in table 3

Table 3: Difference between Rural and Urban Secondary School Students in their Meta Cognitive Skills

Variable	Locality	N	M	SD	df	t-value
Meta Cognitive Skills	Rural	67	79.49	18.57	198	2.37 *
	Urban	133	86.10	18.70		

Significant at .05 Level

Table 3 makes it clear that for meta cognitive skills, mean score of secondary school rural and urban students is 79.49 and 86.10 respectively. SD for rural and urban students is 18.57 and 18.70 respectively. Then t-value is 2.37, which is significant at .05 level. Thus, it may be interpreted that there exists significance difference between secondary school rural and urban students in their meta cognitive skills. Since mean score (86.10) of rural secondary school students is greater than mean score (79.49) of urban secondary school students hence it may be interpreted that urban secondary school. Students possess more meta cognitive skills than their counterparts rural secondary school students. Therefore, the hypothesis that there exists significance difference between secondary school rural and urban students in their meta cognitive skills, was accepted. Graph 3.7 shows mean scores of secondary school rural and urban students in their meta cognitive skills.

Results Pertaining to Relationship between Meta Cognitive Skills and Academic Achievement among Secondary School Students

To find the relationship between Meta Cognitive Skills and Academic Achievement among secondary school students, Data was analyzed and relevant values were organized in table 4

Variable	N	df	r
Meta Cognitive Skills	200	198	0.206 **
Academic Achievement			

** Significant at .01 Level

Table 4 explores that coefficient of correlation between Meta Cognitive Skills and Academic Achievement among secondary school students is 0.206, which is significant at 0.01 level of significance. Thus, it may be interpreted that there exists significant (weak) positive relationship between Meta Cognitive Skills and Academic Achievement among secondary school students. Therefore, the hypothesis was accepted.

CONCLUSIONS

At the end, researcher concluded that secondary school students do not differ in their academic achievement and meta- cognitive skills on the basis of gender and locality. Hence, teachers, parents and administrators should treat secondary school students equally irrespective of their gender and locality. They should provide with equal opportunities for training in meta-cognitive skills. Since urban secondary school students possess more Meta cognitive skills than their counterpart's rural secondary school students. Hence, there is a need to provide training in developing meta-cognitive skills of urban secondary school students also. On the other hand, meta- cognitive skills and academic achievement have positive correlated with each other. Hence teachers, parents and administrator should make endeavour to develop meta-cognitive skills among secondary school students, which in turn will improve academic achievement among secondary school students.

References

Ahmadi, K., Ketabi, S., & Rabiee, M. (2012). The Effect of Explicit Instruction of Meta Cognitive Learning Strategies on Promoting Iranian Intermediate Language Learners' Writing Skill. Theory and Practice in Language Studies, 2(5), 938.

Aksan, N., & Kisac, B. (2009). A descriptive study: Reading comprehension and cognitive awareness skills. Procedia-Social and Behavioral Sciences, 1(1), 834-837.

Archibald, T. N. (2010). The effect of the integration of social annotation technology, first principles of instruction, and team-based learning on students' reading comprehension, critical thinking, and meta-cognitive skills. The Florida State University.

Baker, D. P., & Stevenson, D. L. (1986). Mothers' strategies for children's school achievement: Managing the transition to high school. Sociology of education, 156-166.

C., Wandeler, C., &Niggli, A. (2014).Explaining differences in reading motivation between immigrant and native students: The role of parental involvement. International Journal of Educational Research, 64, 12-25.

Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A metaanalysis. Educational research review, 14, 33-46.

Cherian, V. I. (1992). Relationship between parental education and academic achievement of Xhosa children from monogamous and polygynous families. The Journal of Social Psychology, 132(5), 681-683.

De Smedt, B., Swillen, A., Ghesquiore, P., Devriendt, K., &Fryns, J. P. (2003). Preacademic and early academic achievement in children with velocardiofacial syndrome (del22q11. 2) of borderline or normal intelligence. Genetic Counselling, 14(1), 15-30.

Duckworth, A. L., Taxer, J. L., Eskreis-Winkler, L., Galla, B. M., & Gross, J. J. (2019). Self-Control and Academic Achievement. Annual review of psychology, 70, 373-399.

Franco, M. A. (2017). Effects of Negative Climate for Diversity on Cognitive Outcomes of Latina/o College Students Attending Selective Institutions: A Comparison by Students' Gender, First-Generation College Status, and Immigrant Status (Doctoral dissertation, Azusa Pacific University).

George, A., &Kappan, M. D. (2010). Metacognition Through Technology and Teaching. i-Manager's Journal on Educational Psychology, 4(3), 32.

Green, C. L., Walker, J. M., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. Journal of educational psychology, 99(3), 532.

Yunus, A., & Hamzah, M. I. (2018). Enhancing Students' Academic Performance In Islamic Studies Via Parental Involvements In North-Central Nigeria. e-Bangi, 11(2).2019.