SOCIAL INTELLIGENCE AND METACOGNITION OF ADOLESCENTS

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ABSTRACT

The present study aims to find out the level of social intelligence and metacognition of adolescents and the correlation between social intelligence and metacognition of adolescents. Since it is a fact finding expedition, survey method was adopted by the investigator. Stratified random sampling techniques of 120 adolescents falling in the age group of 18-20 years were taken for this investigation. The above samples were taken from the undergraduate students who are studying in two Government arts and science colleges in Tiruchirappalli District which are the Colleges, affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India, of whom 69 are boys and 51 are girls. Special attention was given to such factors like gender and subjects. Social Intelligence Scale is developed and validated by the investigator (2011) and Metacognition Inventory by Punitha Govil (2003) was used to collect the data. The data are analysed by percentage analysis, mean, standard deviation,'t' test and correlation. The findings of the study results reveal that (i) the 54.2 percent of adolescents have high level of social intelligence and 67.5 percent of adolescents have moderate level of metacognition, (ii) there is significant difference between boy and girl adolescents with regard to social intelligence and its dimensions namely social information processing, social awareness and social skills (iii) there is no significant difference between boy and girl adolescents with regard to metacognition and its dimensions such as regulation of cognition and knowledge of cognition (iv) there is significant difference between arts group and science group adolescents in their social intelligence and in their metacognition, (v) there is no significant relationship between social intelligence and metacognition of adolescents with regard to boy, arts group and science group respondents, but there is no significant relationship between social intelligence and metacognition of adolescents with regard to girl respondents.

***Keywords**: Social Intelligence, Metacognition, Cognition, Adolescents, Social skills*

INTRODUCTION

Education is the agent which helps in increasing contemporary knowledge and in the dissemination of information on current facts. It meets the challenge of our time and attempts to meet the needs of the country and also it should help adolescents become useful members of society. It should also help them to develop an appreciation of their cultural heritage and live more satisfying lives. Social Intelligence is the ability to understand and deal with persons. It is the ability to understand and apply psychological principles of human relationships. According to Edward L. Thorndike (1920), defines that, Social intelligence was first defined in 1920 as "the ability to act wisely in human relationships". John H. Flavell (1979) first used the word 'metacognition'. He describes it in these words Metacognition refers to one's knowledge concerning one's own cognitive processes or anything related to them. Metacognition is defined as 'cognition about cognition', or 'knowing about knowing'. It can take many forms; it includes knowledge about when and how to use particular strategies for learning or for problem solving of adolescents. Adolescence is the bridge between childhood and adulthood. It is a stage in development marked by amazing spurts in physical cognitive and social developments. Adolescence is the most crucial and significant period of an individual's physical, mental, moral, spiritual, sexual and social outlook. Stanley Hall describes the period of adolescence as a period of great stress and strain, storm and strife.

SIGNIFICANCE OF THE STUDY

In the present trend, the researchers are intently wants to do the research in the field of psychology or educational psychology. However, Social intelligence and metacognition of adolescents are necessary for all the levels of education namely primary, secondary and higher education. Generally, social Intelligence and metacognition makes its greatest contribution to education by suggesting that the adolescents need to expand their repertoire of techniques, tools and strategies beyond in it. Metacognition is an individual's knowledge of their own cognitive processes and their ability to control these processes by organizing, monitoring and modifying them as a function of learning. Metacognition has been linked to a wide variety of positive academic outcomes of college students such as better results and performance on tests of intelligence. The research work done by Marcel Veenman et al. (2005) studied the relations between intellectual and metacognitive skills in early adolescence. The findings of the study was revealed that metacognitive cueing triggered a higher level of metacognitive activities that were explicitly addressed by such cues, as well as other metacognitive activities that implicitly prospered by cueing. Moreover, metacognitive cueing fielded better learning outcomes. The study conducted by Savia Coutinho (2006) investigated the relationship between the need for cognition, metacognition and

intellectual task performance. The findings revealed that there was a significant correlation between the need for cognition and metacognition. The investigation done by Harani et al. (2013) explored the effect of metacognitive strategy training on social skills and problem solving performance. The results of the above study indicated that the adolescents in the metacognitive treatment group significantly improved in both social skills and problem-solving performance. By examining a few selected demographic characteristics of arts and science college students and based on the above discussions with regard to the research variables namely metacognition and social intelligence, the investigator attempts to gain valuable insight into the relationship that exists among those research variables and to find out the level and relationship of metacognition and social intelligence.

OBJECTIVES

1. To find out the level of social intelligence and metacognition of adolescents.
2. To find out whether there is any significant difference between male and female adolescents in their social intelligence and metacognition.
3. To find out whether there is any significant difference between arts group and science group adolescents in their social intelligence and metacognition.
4. To find out whether there is any significant relationship between social intelligence and metacognition of adolescents.

NULL HYPOTHESES

1. There is no significant difference between boy and girl adolescents in their social intelligence and metacognition.
2. There is no significant difference between arts group and science group adolescents in their social intelligence and metacognition.
3. There is no significant relationship between social intelligence and metacognition of adolescents.

METHODOLOGY

The survey method was followed for this investigation. Since, it is the method of research to study the relationship between social intelligence and metacognition of adolescents. Stratified random sampling techniques of 120 adolescents from one arts and Science College were taken for this investigation in Tiruchirappalli District. The above samples were taken from the Government arts and Science College in Tiruchirappalli who are studying

in arts and Science College in Tiruchirappalli which is affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India, of whom 69 are boys and 51 are girls. Special attention was given to such factors like gender and group of study. Social Intelligence Scale is developed and validated by the investigator in the year 2011 and Metacognition Inventory were standardized by Punitha Govil (2003) was used to collect the data. The data are analysed by percentage analysis, 't' test and correlation. The results of the study are presented in the following tables.

ANALYSIS AND INFERENCES

The level of social intelligence and metacognition of adolescents is as follows:-

TABLE-1: LEVEL OF SOCIAL INTELLIGENCE OF ADOLESCENTS

SOCIAL INTELLIGENCE AND ITS DIMENSIONS	Low		Moderate		High	
	N	%	N	%	N	%
Social Information Processing	12	10.0	96	80.0	12	10.0
Social Awareness	11	9.2	79	65.8	30	25.0
Social Skills	4	3.3	75	62.5	41	34.2
Social Intelligence(General)	0	0	55	45.8	65	54.2

It is clear from the table-1 that 10.0% of adolescents have low, 80.0% of them have moderate and 10.0% of them have high level of social information processing. It is understood from the table that 9.2% of adolescents have low, 65.8% of them have moderate and 25.0% of them have high level of social awareness. It is inferred from the table that 3.3% of adolescents have low, 62.5% of them have moderate and 34.2% of them have high level of social skills. It is elegant from the table that zero percent of adolescents have low, 45.8% of them have moderate and 54.2% of them have high level of social intelligence (in general).

Null Hypothesis 1: There is no significant difference between boy and girl adolescents in their social intelligence.

TABLE-2: DIFFERENCE BETWEEN BOY AND GIRL ADOLESCEINTS IN THEIR SOCIAL INTELLIGENCE

SOCIAL INTELLIGENCE AND ITS DIMENSIONS	BOYS (N=69)		GIRLS (N=51)		Calculated 't' value	Remarks at 5% level
	Mean	SD	Mean	SD		
Social Information Processing	15.79	2.68	16.41	2.61	1.254	NS
Social Awareness	13.58	2.16	14.61	2.65	2.338	S
Social Skills	14.35	2.34	14.96	2.26	1.437	NS
Social Intelligence (General)	43.72	5.72	45.98	6.05	2.083	S

(At 5% level of significance, the table value of 't' is 1.96)

From the above table it is understood that there is no significant difference between boy and girl adolescents in their social information processing and social skills, as the calculated 't' values 1.254 and 1.437 are less than the table value 1.96 at five percent level of significance. But there is significant difference between boy and girl adolescents in their social awareness, as the calculated 't' value 2.338 is greater than the table value 1.96 at five percent level of significance. While comparing the mean scores, the girl adolescents are higher in their social awareness than the boy adolescents. In general, there is significant difference between boy and girl adolescents in their social intelligence, as the calculated 't' value 2.083 is greater than the table value 1.96 at five percent level of significance. Hence the null hypothesis is rejected.

Null Hypothesis 2: There is no significant difference between arts group and science group adolescents in their social intelligence.

TABLE-3: DIFFERENCE BETWEEN ARTS GROUP AND SCIENCE GROUP ADOLESCEINTS IN THEIR SOCIAL INTELLIGENCE

SOCIAL INTELLIGENCE AND ITS DIMENSIONS	ARTS GROUP (N=57)		SCIENCE GROUP (N=63)		Calculated 't' value	Remarks at 5% level
	Mean	SD	Mean	SD		
Social Information Processing	15.31	2.82	16.73	2.33	3.004	S
Social Awareness	13.56	2.18	14.42	2.56	1.980	NS
Social Skills	13.94	2.09	15.20	2.36	3.072	S
Social Intelligence (General)	42.82	5.60	46.36	5.78	3.398	S

(*At 5% level of significance, the table value of 't' is 1.96*)

It is understood from the above table-3 that there is no significant difference between arts group and science group adolescents in their social awareness, as the calculated 't' value 1.980 is less than the table value 1.96 at five percent level of significance. But there is significant difference between arts group and science group adolescents in their social information and social skills, as the calculated 't' values 3.0004 and 3.072 are greater than the table value 1.96 at five percent level of significance. While comparing the mean scores, the science group adolescents are higher in their social information processing and social awareness than the arts group adolescents. In general, there is significant difference between arts group and science group adolescents in their social intelligence, as the calculated 't' value 3.398 is greater than the table value 1.96 at five percent level of significance. Hence the null hypothesis is rejected.

TABLE-4: LEVEL OF METACOGNITION OF ADOLESCENTS

METACOGNITION AND ITS DIMENSIONS	Low		Moderate		High	
	N	%	N	%	N	%
Knowledge of Cognition	71	59.2	28	23.3	21	17.5
Regulation of Cognition	22	18.3	82	68.3	16	13.3
Metacognition (General)	21	17.5	81	67.5	18	15.0

It is clear from the table-1 that 59.2% of adolescents have low, 23.3% of them have moderate and 17.5% of them have high level of knowledge of cognition. It is understood from the table that 18.3% of adolescents have low, 68.3% of them have moderate and 13.3% of them have high level of regulation of cognition. It is elegant from the table that 17.5% of adolescents have low, 67.5% of them have moderate and 15.0% of them have high level of metacognition (in general).

Null Hypothesis 3: There is no significant difference between boy and girl adolescents in their metacognition.

TABLE-5: DIFFERENCE BETWEEN BOY AND GIRL ADOLESCENTS IN THEIR METACOGNTION

METACOGNITION AND ITS DIMENSIONS	BOYS (N=69)		GIRLS (N=51)		Calculated 't' value	Remarks at 5% level
	Mean	SD	Mean	SD		
Knowledge of Cognition	37.59	9.33	35.76	9.72	1.043	NS
Regulation of Cognition	39.98	10.13	36.17	9.75	2.069	S
Metacognition (General)	77.14	19.43	71.94	18.94	1.466	NS

(At 5% level of significance, the table value of't' is 1.96)

It is inferred from the table-5 that there is no significant difference between boy and girl adolescents in their knowledge of cognition, as the calculated't' value 10.43 is less than the table value 1.96 at five percent level of significance. But there is significant difference between boy and girl adolescents in their regulation of

cognition, as the calculated‘t’ value 2.069 is greater than the table value 1.96 at five percent level of significance. While comparing the mean scores, the boy adolescents are higher in their regulation of cognition than the girl adolescents. In general, there is no significant difference between boy and girl adolescents in their metacognition, as the calculated ‘t’ value 1.466 is greater than the table value 1.96 at five percent level of significance. Hence the null hypothesis is accepted.

Null Hypothesis 4: There is no significant difference between arts group and science group adolescents in their metacognition.

TABLE-6: DIFFERENCE BETWEEN ARTS GROUP AND SCIENCE GROUP ADOLESCENTS IN THEIR METACOGNITION

METACOGNITION AND ITS DIMENSIONS	ARTS GROUP (N=57)		SCIENCE GROUP (N=63)		Calculated ‘t’ value	Remarks at 5% level
	Mean	SD	Mean	SD		
Knowledge of Cognition	39.50	8.24	34.38	9.97	3.052	S
Regulation of Cognition	40.63	9.15	36.31	10.55	2.380	S
Metacognition(General)	79.61	17.77	70.69	19.81	2.584	S

(At 5% level of significance, the table value of ‘t’ is 1.96)

It is clear from the above table-6 that there is significant difference between arts group and science group adolescents in their knowledge of cognition and regulation of cognition, as the calculated ‘t’ values 3.052 and 2.380 are greater than the table value 1.96 at five percent level of significance. While comparing the mean scores, the arts group adolescents are higher in their knowledge of cognition and regulation of cognition than the science group adolescents. In general, there is significant difference between arts group and science group adolescents in their metacognition, as the calculated ‘t’ value 2.584 is greater than the table value 1.96 at five percent level of significance. Hence the null hypothesis is rejected.

Null Hypothesis 5: There is no significant relationship between social intelligence and metacognition of adolescents.

TABLE-5: RELATIONSHIP BETWEEN SOCIAL INTELLIGENCE AND METACOGNITION OF ADOLESCENTS

Social Intelligence Vs Metacognition	**Calculated 'γ' value**	**Remarks at 5% level**
Social Information Processing	0.057	NS
Social Awareness	0.447	NS
Social Skills	0.289	NS
Social Intelligence (General)	0.321	NS

(At 5% level of significance for 2, 118 df, the table value of 'γ' is 3.07)

The table reveals that there is no significant relationship between social intelligence and the dimensions of social intelligence namely social information processing, social awareness, social skills and metacognition of arts and science college adolescents, as the calculated '**γ**' values 0.057, 0.447 and 0.289 are lower than the table value 3.07 at five percent level of significance.

In general, there is no significant relationship between social intelligence and metacognition of arts and science college adolescents, as the calculated '**γ**' value 0.321 is lower than the table value 3.07 at five percent level of significance. Hence the null hypothesis is accepted.

FINDINGS

1. The 54.2 percent of adolescents have high level of social intelligence and 67.5 percent of adolescents have moderate level of metacognition.
2. There is significant difference between boy and girl adolescents in their social intelligence, while comparing the mean scores, the girl adolescents are higher in their social intelligence than the boy adolescents.
3. There is significant difference between arts group and science group adolescents in their social intelligence, while comparing the mean scores, the science group adolescents are higher in their social intelligence than the arts group adolescents.
4. There is no significant difference between boy and girl adolescents in their metacognition.

5. There is significant difference between arts group and science group adolescents in their metacognition, while comparing the mean scores, the arts group adolescents are higher in their metacognition than the science group adolescents.
6. There is no significant relationship between the dimensions of social intelligence namely social information processing, social awareness, social skills and social intelligence and metacognition of arts and science college adolescents.

REFERENCES

1. Aggarwal, J.C. (2007). *Essentials of Educational Psychology*, New Delhi: Vikas Publishing House Private Limited.
2. Aggarwal, Y.P. (2002). *Statistical Methods: Concepts, application and computation*, New Delhi: Sterling Publishers Private Limited.
3. Best, W., & Khan, V. (2004). *Research in Education*, New Delhi: Prentice-Hall of India Private Limited.
4. Brown, A. (1987). *Metacognition, executive control, self-regulation, and other more mysterious mechanisms*. In F. Weinert, & R. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116). Hillsdale, NJ, Erlbaum.
5. Chellamani, K. (2007). *Learning Centered Classrooms: Metacognition Targets*, Chennai: Anuradha Publications.
6. Dogan, T., & Cetın, B. (2009). The validity, reliability and factorial structure of the turkish version of the tromso social intelligence scale. *Educational Sciences: Theory and Practice*,9(2), 709-720.
7. Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 34, 906-911.
8. Govil, P. (2003). *Metacognitive Inventory (MCI).* National Psychological Corporation. Agra: Kacheri Ghat.
9. Hackworth, C. A., & Brannon, L. A. (2006). Understandings and managing others: The impact of social intelligence upon social influence. *Communication Research Reports*, 23(3), 171-178.
10. Harani, V., Eslami Sharbabaki, H., Ahmadi Deh, M. and Parehlcordi, A. (2013). The effect of Metacognitive Strategy Training on Social Skills and Problem-Solving Performance, *J. Psychology and Psychoterapy*, 3(4), 1-4.
11. Krishnaswami, O. R., & Ranganatham, M. (2007). *Methodology of research in social sciences*. New Delhi: Himalaya Publishing House.

12. Marcel V.J. Veenman, Bernadette H.A.M. Van Hout-Wolters and Peter Afflerbach (2006). Metacognition and learning: conceptural and methodological considerations, *Metacognition Learning*, 1, 3-14.
13. Marlowe, H. A. (1986). Social intelligence: Evidence for multidimensionality and construct independence. *Journal of Educational Psychology*, 78(1), 52-58.
14. Prabhakar, P. S. (2009). *Status of social intelligence of teacher trainees and pupils.* Paper presented at the National Seminar on Heart of Education is Education of the Heart, through the Heart, for the Heart, St. Ignatius College of Education, Tirunelveli.
15. Savia A. Coutinho (2006). The Relationship between the Need for Cognition, Metacognition and Intellectual Task Performance, *Educational Research and Reviews*, 1(5), 162-164.
16. Suresh, K. (2009). *Social intelligence of student teachers*. New Delhi: Discovery.

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