Original Research Article   https://doi.org/10.20546/ijcmas.2020.908.227

Studying the Relationship between Emotional Intelligence and its Components with Metacognitive Skillfulness in College Students

Parul Kalia[*] and Sarita Saini

Department of Human Development and Family Studies, College of Community Science, Punjab Agricultural University, Ludhiana, Punjab, India

*Corresponding author

A B S T R A C T

Emotional intelligence is the ability for recognizing our own feelings and those of others, for motivating ourselves and for managing emotions well in us and in our relationships. Undoubtedly, emotional intelligence is highly beneficial in the areas of education, work and mental health. The aim of this paper is to investigate the relationship between the types of emotional intelligence and metacognitive skillfulness among college students. The study was conducted in the constituent colleges of Punjab Agricultural University, Ludhiana. The study adopted the quantitative research methods approach that concurrently integrated procedures in the collection, analysis and interpretation of the data. MSCEIT-Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer *et al.*, 2000) was used to assess the components of the emotional intelligence whereas metacognitive skillfulness was assessed by Metacognitive Awareness Inventory.

Introduction

Emotional intelligence is a set of learned skills and competencies that predict positive outcomes at home with one's family, in school and at work. Goleman (1995) explained that people who possess these skills and competencies are healthier, less depressed, and outstanding in academics and have better relationships. The emotional intelligence is defined in terms of the ability to love and be loved by friends, partner and family members.

Emotional intelligence is increasingly relevant to the organizational development of people, because the principles of emotional intelligence provide a new way to understand and assess people's behaviors, management styles, attitudes, interpersonal skills and potentials. Goleman defined emotional intelligence as including "abilities such as being able to motivate one and persist in the face of frustration, to control impulses and delay gratification; to regulate one's moods and keep distress from swapping the ability to think; to emphasize and to hope".

Mayer and Salovey (1997) coined the term 'emotional intelligence' to describe the human capacity to reason about emotions. The notion of emotional intelligence (EI) includes the idea that people have the ability to perceive, appraise and express emotions; the ability to access or generate feelings that facilitate thought; the ability to understand emotions and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. According to the ability model, The EI is divided into four branch model.

Perceiving emotions the ability to accurately recognize how you and those around you feel,

Using emotions: the ability to generate emotions and use emotions in cognitive tasks such as problem solving and creativity,

Understanding emotions: the ability to understand complex emotions and emotional 'chains', how emotions transition from one state to another, and

Managing emotions: the ability to intelligently integrate the data of emotions in yourself and in others in order to devise effective strategies that help you achieve positive outcomes.

These four Branch sections are then divided into two different sections: Experiential and Strategic Emotional Intelligence.

Experiential Emotional Intelligence involves the identification of emotion and its productive use in thought. It is considered to index the more basic level processing of emotion. It combines 'Perceiving Emotions' and 'Using Emotions'. Strategic Emotional Intelligence involves reasoning about emotions and how they may be managed. It is considered to index the higher level, conscious processing of emotions. It combines 'Understanding Emotions' and 'Managing Emotions'.

From previous decades, more attention has been paid to the effect of emotional intelligence on academic success in education. Many researchers shown that the people, who are academically brilliant, yet are socially inept and unsuccessful at work or in their personal relationships. By understanding emotions and how to control them, they will better able to express, own feelings and others feeling. This will help to communicate more effectively and forge stronger relationship, both at work and in personal life.

Studies also have shown evidences that when it comes to long-term success and success in varied life situations, being high in emotional intelligence is more important than being high in academic abilities. Therefore, understanding one's thoughts, feelings and emotions will definitely enhance the in-depth understanding of one's cognitive abilities and processes and ultimately it will lead you towards set goals and paves the way to long term success in life.

The term metacognition was first brought to the literature by John Flavell (1976) which simply means thinking about your own thinking. According to Schraw and Dennison (1994), metacognition is defined as thinking well, understanding and controlling one's learning. Flavell covered metacognition in two main categories in the form "knowledge of cognition" and "regulation of cognition". However, in time, other researchers (Brown, 1987; Flavell, 1987; Jacobs and Paris, 1987) extended these categories and determined sub-components. Knowledge of cognition was separated into components in the form of definitional (statement), methodological (process) and situational knowledge. In addition, regulation of cognition was categorized as planning, knowledge

management strategies, observation (self-monitoring), debugging (repair) strategies and regulative skills including assessment.

According to Caliskan (2010), a student who is able to use his/her metacognitive awareness thinks about what he/she knows about the subject that he/she is going to learn, plans how much time he/she needs to learn the subject and the study processes.

Petrides *et al.,* (2004) have looked at the relationship between trait emotional intelligence, academic performance and cognitive ability found that emotional intelligence moderated the relationship between academic performance and cognitive ability.

Emotionally intelligent people are more likely to succeed in everything they undertake. Teaching emotional and social skills is very important at school; it can affect academic achievement positively not only during the year they are taught, but during the years that follow as well. Teaching these skills has a long-term effect on achievement. In short, emotionally intelligent student would have better academic achievement. Consequently, the present study was planned with the following objectives:

The main objectives of the study were to assess the demographic profile of the college students and investigation of the relationship of components of emotional intelligence with the metacognitive skillfulness of the college students.

Materials and Methods

Sample selection

The study was conducted in the four constituent colleges of Punjab Agricultural University, Ludhiana. The final sample comprised 200 college undergraduates (aged 17 to 19 years) of Punjab Agricultural University, Ludhiana. A sample of 200 male and 200 female students studying in different undergraduate programmes was selected through proportionate sampling technique.

Research instruments

Mayer-Salovey-Caruso Emotional Intelligence Test

Mayer-Salovey-Caruso Emotional Intelligence Test developed by Mayer, Salovey and Caruso (2000) was used to assess the emotional intelligence and its components of the selected college students. It is ability based scale i.e. it measures how well people perform tasks and solve emotional problems, rather than simply asking them about their subjective assessment of their emotional skills.

Metacognitive Awareness Inventory

The metacognitive skillfulness of the respondents was assessed by Metacognitive Awareness Inventory which was developed by Schraw and Dennison (1994). It is designed to investigate the various aspects of metacognition and to score for individual components and sub-components of metacognition, such as declarative knowledge, procedural knowledge, conditional knowledge, planning, information management strategies, comprehension monitoring, debugging and evaluation. This inventory is comprised of 52 questions based on the two components (Knowledge of Cognition and Regulation of Cognition) of metacognition.

Statistical analysis of data

Frequencies, percentages and correlation analysis were used for statistical analysis of the data.

Results and Discussion

Assessment of the demographic profile of respondents

The data put forth in the table 1 represents the demographic profile of the respondents. The selected respondents for the study were in the age range of 17-19 years (28.50 %, 31.50 % and 40.0%, respectively). The data pertaining to the number of siblings revealed that 5.50 per cent subjects had no siblings, whereas 27.50 per cent had one sibling, 36.50 per cent had two siblings and rest 30.50 per cent had three or more siblings.

As regards the educational level of the mothers of the respondents, a major proportion of them were either up to 5th or metric (43.50% and 26%, respectively). However, 14 per cent were illiterate and only 3.50 per cent were graduates and 2 per cent were post-graduates. of adolescents with A major proportion of fathers of adolescents were educated up to metric (42.00%) followed by 24 per cent up to +2, 16.50 per cent up to 5th, 9.50 per cent illiterate, 4.50 per cent graduates and only 3.50 per cent post-graduates.

The data regarding family type of the respondents reflected 63 per cent of adolescents belonged to the nuclear families and rest (37%) belonged to joint families. Whereas in terms of occupation of the mothers of the respondents, it was interesting to note that majority of the mothers (77.50%), irrespective of male and female respondents were housewives and the percentage was slightly higher in case of mothers of male respondents (82%) as compared to mothers of female respondents (73%). As regards the occupation of the fathers of the respondents, major proportions (58%) of fathers were engaged in business while very small proportion (1%) was non-working.

Investigating the relationship of Emotional Intelligence and its components with the Metacognitive Skillfulness and its dimensions

Goleman (1998) proposed that emotional intelligence is the subset of social intelligence that involves the ability to monitor one's own and others feelings and emotions, to discriminate among them and to use this information to guide ones thinking and actions. Therefore, Emotional Intelligence has four branches: Perceiving emotions, reasoning with emotions, understanding emotions and managing emotions.

The data furnished in the Table 2 illustrates the correlation between types of emotional intelligence and varying dimensions of metacognition across male respondents from various colleges. The in-depth observation of the correlation analysis elucidated the statistical significant relationship between the overall metacognitive skillfulness and emotional intelligence and its components. It was clearly evident from the data that from the various dimensions of the metacognition declarative knowledge, information management strategies, comprehension monitoring and debugging were found to be significantly correlated with the overall emotional intelligence of the male students. While procedural knowledge, conditional knowledge, planning and evaluation dimensions showed statistically non-significant correlation with the overall emotional intelligence.

Whereas, for experiential emotional intelligence of the male respondents, a significant correlation was observed with dimensions of metacognition i.e. declarative knowledge, information management strategies, comprehension monitoring, debugging and evaluation (r= 0.251; p<0.05, r= 0.225; p<0.05, r= 0.274; p<0.01, r= 0.232;

p<0.05, r= 0.228; p<0.05, respectively) which indicates that the males were mostly better at regulating their learning by identifying their emotions.

Table.1 Demographic Profile of the respondents

Demographic Variables	Overall Respondents (N=200)	Male Respondents (n=100)	Female Respondents (n=100)
	f (%)	f (%)	f (%)
Age (years)			
17	57 (28.50)	29 (29.00)	28 (28.00)
18	63 (31.50)	30 (30.00)	33 (33.00)
19	80 (40.00)	41 (41.00)	39 (39.00)
Number of Siblings			
Only child	11 (5.50)	6 (6.00)	5 (5.00)
One	55 (27.50)	34 (34.00)	21 (21.00)
Two	73 (36.50)	35 (35.00)	38 (38.00)
> two	61 (30.50)	25 (25.00)	36 (36.00)
Mother's Education			
Illiterate	28 (14.00)	13 (13.00)	15 (15.00)
Up to 5th	87 (43.50)	45 (45.00)	42 (42.00)
Metric	52 (26.00)	27 (27.00)	25 (25.00)
Up to +2	22 (11.00)	10 (10.00)	12 (12.00)
Graduate	7 (3.50)	3 (3.00)	4 (4.00)
Postgraduate	4 (2.00)	2 (2.00)	2 (2.00)
Father's Education			
Illiterate	19 (9.50)	8 (8.00)	11 (11.00)
Up to 5th	33 (16.50)	15 (15.00)	18 (18.00)
Metric	84 (42.00)	45 (45.00)	39 (39.00)
Up to +2	48 (24.00)	25 (25.00)	23 (23.00)
Graduate	9 (4.50)	4 (4.00)	5 (5.00)
Postgraduate	7 (3.50)	3 (3.00)	4 (4.00)
Mother's Occupation			
House wife	155 (77.50)	82 (82.00)	73 (73.00)
Business	15 (7.50)	5 (5.00)	10 (10.00)
Service	25 (12.50)	11 (11.00)	14 (14.00)
Farming	2 (1.00)	1 (1.00)	1 (1.00)
Labourer	3 (1.50)	1 (1.00)	2 (2.00)
Father's Occupation			
Non-Working	2 (1.00)	2 (2.00)	0
Business	116 (58.00)	53 (53.00)	63 (63.00)
Service	38 (19.00)	20 (20.00)	18 (18.00)
Farming	29 (14.50)	16 (16.00)	13 (13.00)
Labourer	15 (7.50)	9 (9.00)	6 (6.00)
Type of family			
Nuclear	126 (63.00)	60 (60.00)	66 (66.00)
Joint	74 (37.00)	40 (40.00)	34 (34.00)

Table.2 Component-wise correlation between emotional intelligence and metacognitive skillfulness among male students

Metacognition and its components	Overall Emotional Intelligence	Experiential Emotional Intelligence	Strategic Emotional Intelligence
Overall Metacognition	0.242*	0.283**	0.269**
Declarative Knowledge	0.205*	0.251*	0.148
Procedural Knowledge	-0.078	-0.060	0.063
Conditional Knowledge	0.153	0.101	0.097
Planning	0.012	0.168	0.020
Information Management Strategies	0.331**	0.225*	0.237*
Comprehension Monitoring	0.214*	0.274**	0.173
Debugging	0.200*	0.232*	0.140
Evaluation	0.187	0.228*	0.219*

* Significant at 0.05 level;   ** Significant at 0.01 level

Table.3 Component-wise correlation between emotional intelligence and metacognitive skillfulness among female students

Metacognition and its components	Overall Emotional Intelligence (r)	Experiential Emotional Intelligence (r)	Strategic Emotional Intelligence (r)
Overall Metacognition	0.190*	0.187*	0.209*
Declarative Knowledge	0.160	0.070	0.099
Procedural Knowledge	-0.094	-0.157	-0.017
Conditional Knowledge	0.194	0.137	0.032
Planning	-0.041	-0.118	0.054
Information Management Strategies	0.306**	0.126	0.251*
Comprehension Monitoring	0.040	-0.004	0.101
Debugging	0.148	0.071	0.192
Evaluation	0.181	0.158	0.213*

* Significant at 0.05 level; ** Significant at 0.01 level

Table.4 Component-wise correlation between emotional intelligence and metacognitive skillfulness among students

Metacognition and its components	Overall Emotional Intelligence	Experiential Emotional Intelligence	Strategic Emotional Intelligence
Overall Metacognition	0.219**	0.177*	0.243**
Declarative Knowledge	0.185**	0.160*	0.126
Procedural Knowledge	-0.085	-0.112	0.025
Conditional Knowledge	0.172*	0.112	0.066
Planning	-0.013	0.021	0.036
Information Management Strategies	0.319**	0.173*	0.244**
Comprehension Monitoring	0.131	0.125	0.137
Debugging	0.175*	0.140*	0.164*
Evaluation	0.184**	0.198**	0.216**

* Significant at 0.05 level;   ** Significant at 0.01 level

However, there exist a significant correlation between the strategic emotional intelligence and information management strategy and evaluation dimension of the metacognitive skills. The study was in tune with the study of correlation conducted by Aghasafari (2006) in which she found a significant correlation between overall emotional intelligence measure and language learning strategies. In another study dealing with the interrelatedness of emotional intelligence and learning strategies, Hasanzadeh and Shahmohamadi (2011) launched a research project with 100 university learners majoring in different fields. They encountered a significant relationship between the learners' emotional intelligence and their learning strategies.

The data presented in the table 3 illustrates the correlation analysis between different dimensions of metacognition and emotional intelligence and its components among female students. The analysis revealed significant positive correlation of overall metacognition (r= 0.190; p<0.05) and information management strategies dimension (r= 0.306; p<0.01) with overall emotional intelligence of female students. Therefore, it could be divulged from the findings that when adolescents were capable of identifying and regulating their emotions and thoughts then, they were apt to achieve better understanding of their own learning methods. However, no significant association was noticed between other dimensions of metacognitive skillfulness and overall emotional intelligence. These results go along with the research conducted by Sharei *et al* (2012) who found that metacognition and emotional intelligence contribute significantly to the prediction of problem-solving ability.

Further, the table gives a picture that overall metacognition (r= 0.187; p<0.05) and experiential emotional intelligence was found

to be significantly positively correlated. Thus, the result supports the idea that students having good knowledge about their emotions and thoughts were likely to better at knowledge and the regulation of their cognitive processes. Also, the correlation analysis of overall metacognitive skillfulness (r= 0.209; p<0.05), information management strategies dimension (r= 0.251; p<0.05) and evaluation dimension (r= 0.213; p<0.05) of the female respondents were found significantly positive with the strategic emotional intelligence.

This implies that female respondents were good in managing their emotions while regulating their learning style and strategies. Emotional thoughts are often accompanied by a host of additional or second order thoughts relevant for perceiving and regulating emotion and emotion management processes. These results go along with the research conducted by Wells (2000) who suggested that metacognitive control and regulation is comprised of a range of functions including attention allocation, checking, planning, memory retrieval and encoding strategies and detection of performance errors.

The data presented in the table 3 illustrates the correlation analysis between different dimensions of metacognition and emotional intelligence and its components among female students. The analysis revealed significant positive correlation of overall metacognition (r= 0.190; p<0.05) and information management strategies dimension (r= 0.306; p<0.01) with overall emotional intelligence of female students. Therefore, it could be divulged from the findings that when adolescents were capable of identifying and regulating their emotions and thoughts then, they were apt to achieve better understanding of their own learning methods. However, no significant association was noticed between other dimensions of metacognitive

skillfulness and overall emotional intelligence. These results go along with the research conducted by Sharei *et al.,* (2012) who found that metacognition and emotional intelligence contribute significantly to the prediction of problem-solving ability.

Further, the table gives a picture that overall metacognition (r= 0.187; p<0.05) and experiential emotional intelligence was found to be significantly positively correlated. Thus, the result supports the idea that students having good knowledge about their emotions and thoughts were likely to better at knowledge and the regulation of their cognitive processes. Also, the correlation analysis of overall metacognitive skillfulness (r= 0.209; p<0.05), information management strategies dimension (r= 0.251; p<0.05) and evaluation dimension (r= 0.213; p<0.05) of the female respondents were found significantly positive with the strategic emotional intelligence (Table 4).

This implies that female respondents were good in managing their emotions while regulating their learning style and strategies. Emotional thoughts are often accompanied by a host of additional or second order thoughts relevant for perceiving and regulating emotion and emotion management processes. These results go along with the research conducted by Wells (2000) who suggested that metacognitive control and regulation is comprised of a range of functions including attention allocation, checking, planning, memory retrieval and encoding strategies and detection of performance errors.

References

Aghasafari, M. 2006. On the relationship between emotional intelligence and language learning strategies. Unpublished master's thesis, Allameh Tabataba'i University, Iran.

Alavinia, P., and Mollahossein, H. 2012. On the Correlation between Iranian EFL Learners' Use of Meta-cognitive Listening Strategies and Their Emotional Intelligence. International Education Studies, 5:189-203. http://dx.doi.org/10.5539/ies.v5n6p189

Brown, A. 1987. Metacognition, executive control, self-regulation, and other more mysterious mechanisms, F. Weinert and R. Kluwe (Eds.), Metacognition, motivation, and understanding, 65-116, NJ. Erlbaum: Hillsdale.

Caliskan, M. 2010. The effects of learning strategies instruction on metacognitive knowledge, metacognitive skills and achievement, Unpublished PhD Thesis, Selçuk University, Institute of Educational Sciences, Turkey, Number of Thesis: 264337

Flavell, J. H. 1976. Metacognitive aspects of problem solving, In Resnick, L.B. (Ed.), The nature of intelligence (pp. 231–235). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Flavell, J. H. 1987. Speculations about the nature and development of metacognition, In F. Weinert and R. Kluwe (Eds.), Metacognition, motivation, and understanding (pp. 21-29), Lawrence Erlbaum: Hillsdale, NJ.

Goleman, D. 1995. Emotional Intelligence at Work, New York, Bantam Books.

Goleman, D. 1998. Working with Emotional Intelligence, New York: Bantam Books.

Hasanzadeh, R., and Shahmohamadi, F. 2011. Study of Emotional Intelligence and Learning Strategies. Procedia- Social and Behavioral Sciences, 29: 1824-1829.

Jacobs, J. E., and Parıs, S. G. 1987. Children's metacognition about reading: issues in definition, measurement, and instruction, Educational Psychologist, 22(3-4):255-278.

Mayer, J.D., and Salovey, P. 1997. What is emotional intelligence? In P. Salovey and D.J. Sluyter (eds.): Emotional development and emotional intelligence: educational implications (pp. 3-31). New York: Basic Books.

Mayer, J. D., Salovey, P., and Caruso, D. 2000. Emotional intelligence meets traditional standards for intelligence. Intelligence 27: 267-298.

Petrides, K. V., Frederickson, N., and Furnham, A. 2004. The role of trait emotional intelligence in academic performance and deviant behavior at school. Personality and Individual Differences, 36:277-293

Schraw, G., and Dennison, R. 1994 Assessing metacognitive awareness. Contemp Edu Psychol 19:460- 475.

Sharei, M., Kazemi, F., and Jafari, M. 2012. Investigation the effect of emotional intelligence skills and meta-cognitive capabilities on student's mathematical problem solving. Educational Research, 3(11): 844-850.

Wells, A. 2000. Emotional Disorders and Meta-cognition. New York: Wiley.