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A STUDY OF STRENGTH OF RELATIONSHIP BETWEEN METACOGNITIVE SKILLS AND EMOTIONAL INTELLIGENCE AMONG SENIOR SECONDARY SCIENCE STUDENTS

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ABSTRACT

Emotional intelligence plays a crucial role in shaping an individual's ability to manage emotions, communicate effectively, and build relationships. In educational settings, particularly in the context of science students. This paper explores relationship between metacognitive skills and emotional intelligence among senior secondary science students.The objectives of study is to study the level of emotional intelligence among senior secondary science students. To study the relationship between emotional intelligence and metacognitive skills of senior secondary science students. In this descriptive study, the sample consisted of 640 science students of Ajmer district that were selected through stratified random sampling technique used. Emotional intelligence self-rating scale constructed and validated by Investigator and guide were used to collect the data. Pearson's coefficients of correlation were employed as statistical techniques in the present study. The results revealed that there is significant relationship between total emotional intelligence with total metacognitive skills of senior secondary science students. The results further stated that There is significant relationship between total emotional intelligence with planning, Implementation, monitoring and evaluation.

Keywords: Emotional intelligence, metacognitive skills, science students, correlation.

INTRODUCTION

Metacognitive skills are “the abilities used to understand and analyse one’s learning especially influenced by educational background and previous experience” Individuals can govern and regulate their cognitive processes using appropriate strategies, namely organizing, monitoring, and adapting. Metacognitive skills allow learners to control their learning process, thereby reducing anxiety, increasing motivation in learning and instilling confidence. Metacognitive skills make one aware of their strengths and weaknesses and prompt one to behave accordingly. They will be able to manipulate their cognitive processes most appropriately. The possession of metacognitive skills helps learners become self-regulated. Such learners can assume responsibility for their learning process and learning outcomes. Cognitive activities such as comprehension, communication, attention, retention, and problem-solving are intensely regulated by metacognitive skills.

Emotional intelligence (EI) is defined as the ability to perceive, use, understand, manage, and handle emotions. People with high emotional intelligence can recognize their own emotions and those of others, use emotional information to guide thinking and behaviour, discern between different feelings and label them appropriately, and adjust emotions to adapt to environments

Research in the field of emotional intelligence is dominated by three primary theorists including Bar-On, Mayer and Salovey and Daniel Goleman. Reuven Bar–On, a prominent researcher and originator of the term "emotion quotient" views emotional intelligence as being concerned with understanding oneself and others, relating to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands (Bar-On, 1997). Salovey and Mayer (1990) termed emotional which entails the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions”. Later on they expanded their model and defined EI as the ability of an individual to perceive accurately, evaluate and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (Mayer and Salovey, 1997).

In this paper, we are going to present the most discussed level of emotional intelligence. We present the construction of a 9-layer model (pyramid) of emotional intelligence which aims to show the levels a human must pass in order to reach the upper level of EI—emotional unity. The stratification of the pyramid of emotional intelligence is in tune with the pyramid of the functions of general intelligence.

RATIONALE

Generally, students do not know about their capacity of learning new skills and strategies. They lack the inherent urge to learn new information. Our curriculum is framed in such a manner that supports rote learning. There is an urgency to help students in knowing which learning skills are effective, planning an approach to learning task and using effective learning strategies to process. Emotional intelligence results in a greater ability to perform sophisticated information processing about emotions and to use as a guide for their own thoughts and behaviour and for others (Mayer and Salovey 2008) Research on emotional intelligence has been divided into two distinct areas of

perspectives in terms of conceptualizing emotional competencies (Goleman 1998) and their measurements. The proposed research work has been planned to attempt on 9 layer model (pyramid) of emotional intelligence as proposed and advocated by Drigas and Papoutsi (2018).

OBJECTIVES

- To study the relationship between emotional intelligence and metacognitive skills of senior secondary science students.

HYPOTHESES

1. The metacognitive skills, is not significantly correlated with emotional intelligence and its dimensions.

METHODOLOGY

The method chosen in the current study was Descriptive survey method.

SAMPLE AND SAMPLING METHOD

For the present study, a sample of 640 senior secondary science students studying in private and government school affiliated to C.B.S.E and R.B.S.E was selected through Stratified random sampling technique used.

TOOLS USED FOR DATA COLLECTION

The investigator has used the following tools for collection of relevant and required data for the study.

1. Emotional intelligence self-rating scale – constructed and validated by Investigator and guide.

2. Metacognitive skills scale – Meta cognitive skill scale (MCSS) constructed and standardized by Dr. Madhu Gupta and Dr. Suman (2017).

STATISTICAL TECHNIQUES USED

The data was analyzed by using Mean, multiple regression analysis, Pearson Product Moment coefficients .

ANALYSIS, INTERPRETATION AND DISCUSSION

RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, METACOGNITIVE SKILLS AND ITS DIMENSIONS

In the present research work the relationship between emotional intelligence, metacognitive skills and its dimensions was studied by calculating coefficient of correlation for total sample of senior secondary science students. The calculated "Pearson Product Moment coefficients" were tested for their polarity and level of significance has been analyzed and interpreted.

RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND ITS DIMENSIONS WITH METACOGNITIVE SKILLS AND ITS DIMENSIONS

The calculated coefficient of correlation to study the relationship between metacognitive skills and its dimensions with emotional intelligence and its dimensions are presented in following table (Table.No.1). From the below table no.1 it is evident that coefficient of correlation of total emotional intelligence with total metacognitive skills is found to be 0.133. The calculated coefficient of correlation is positive and significant at 0.01 level of significance.

TABLE No. 1

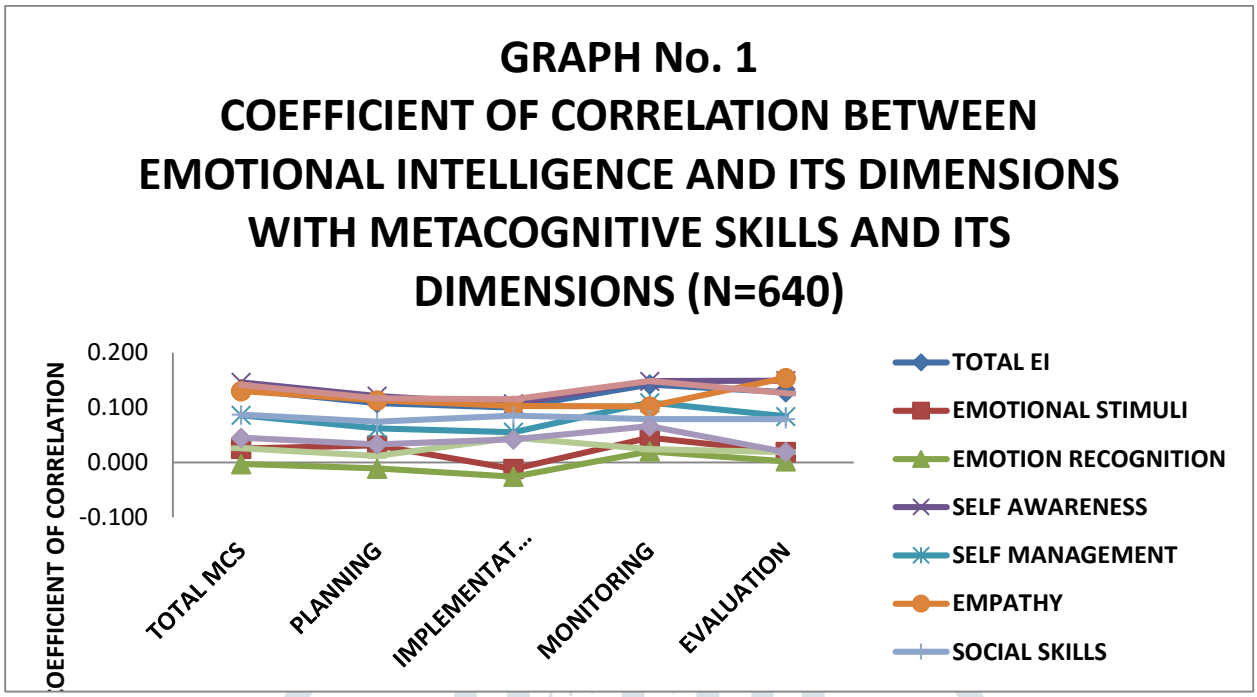
COEFFICIENT OF CORRELATION BETWEEN EMOTIONAL INTELLIGENCE AND ITS DIMENSIONS WITH METACOGNITIVE SKILLS AND ITS DIMENSIONS (N=640)

*0.05 level of significant **0.01 level of significant

S. No.	DIMENSIONS	TOTAL MCS	PLANNING	IMPLEMENTATION	MONITORING	EVALUATION
1	TOTAL EI	0.133**	0.108*	0.100*	0.142**	0.128**
2	EMOTIONAL STIMULI	0.025	0.031	-0.012	0.045	0.019
3	EMOTION RECOGNITION	-0.003	-0.011	-0.026	0.020	0.002
4	SELF AWARENESS	0.146**	0.121**	0.107*	0.148**	0.149**
5	SELF MANAGEMENT	0.086	0.062	0.055	0.109*	0.084
6	EMPATHY	0.130**	0.113*	0.103*	0.102*	0.154**
7	SOCIAL SKILLS	0.087	0.074	0.085	0.079	0.079
8	SELF-ACTULIZATION	0.141**	0.117**	0.115**	0.148**	0.126**
9	TRANSCENDENCE	0.026	0.012	0.045	0.024	0.019
10	EMOTIONAL UNITY	0.045	0.033	0.042	0.066	0.019

Hence, there is significant relationship between total emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, Hypothesis no 2 of present research work has been rejected, which stated as "The total emotional intelligence is not significantly correlated with total metacognitive skills of the senior secondary science students".

As can be seen in Table No-1 it is evident that coefficient of correlation of total emotional intelligence scores with planning dimension of metacognitive skills is found to be 0.108. The calculated coefficient of correlation is positive and significant at 0.05 level of significance.



Hence, there is significant relationship between total emotional intelligence with planning dimension of metacognitive skills of senior secondary science students. Therefore, Hypothesis no 1 of present research work has been rejected, which stated as "The total emotional intelligence is not significantly correlated with planning dimension of metacognitive skills of senior secondary science students."

Table No. 1 it is evident that coefficient of correlation of total emotional intelligence with implementation dimension of metacognitive skills is found to be 0.100. The calculated coefficient of correlation is positive and significant at 0.05 level of significance. Hence, there is significant relationship between total of emotional intelligence with implementation dimension of metacognitive skills of senior secondary science students. Therefore, Hypothesis no 1 of present research work has been rejected, which stated as "The total emotional intelligence is not significantly correlated with implementation dimension of metacognitive skills of the senior secondary science students."

Table No.1 it is evident that coefficient of correlation of total emotional intelligence with monitoring dimension of metacognitive skills is found to be 0.142.The calculated coefficient of correlation is positive and significant at 0.01 level of significance. Hence, there is significant relationship between total of emotional intelligence with monitoring dimension of metacognitive skills senior secondary science students. Therefore, Hypothesis no 1 of present research work has been rejected, which stated as "The total emotional intelligence is not significantly correlated with monitoring dimension of metacognitive skills of the senior secondary science students."

Table No. 1 it is evident that coefficient of correlation of total emotional intelligence with evaluation dimension of metacognitive skills is found to be 0.128. The calculated coefficient of correlation is positive and significant at 0.01 level of significance. Hence, there is significant relationship between total of emotional intelligence with evaluation dimension of metacognitive skills senior secondary science students. Therefore, Hypothesis no 1 of present research work has been rejected, which stated as "The total emotional intelligence is not significantly correlated with evaluation dimension of metacognitive skills of the senior secondary science students."

From the above Table No. 1 it is evident that coefficient of correlation of emotional stimuli dimensions of emotional intelligence with total metacognitive skills is found to be 0.025. The calculated coefficient of correlation is positive and not significant. Hence, there is not significant relationship between emotional stimuli dimension of emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, Hypothesis no 1 of present research work has been selected which stated as "The emotional stimuli dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students"

It is inferred from the above table No. 1 it is evident that coefficient of correlation of emotion recognition dimension of emotional intelligence with metacognitive skills is found to be -0.003. The calculated coefficient of correlation is negative and not significant. Hence, there is not significant relationship between emotion recognition dimensions of emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, hypothesis No.1 of present research work has been selected which stated as, “The emotion recognition dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students.

As can be seen in table No.1 it is evident that coefficient of correlation of self-awareness dimension of emotional intelligence with total metacognitive skills is found to be 0.146.The calculated coefficient of correlation is positive and significant at 0.01 level of significance. Hence, there is significant relationship between self - awareness dimension of emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, hypothesis no.1 of present research work has been rejected which stated as “The self - awareness dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students.

From the above Table No.1 it is evident that coefficient of correlation of self-management dimension of emotional intelligence with total metacognitive skills is found to be 0.086.The calculated coefficient of correlation is positive and not significant. Hence, there is not significant relationship between self-management dimensions of emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, hypothesis no 1 of present research work has been selected which stated as “The self-management dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students."

As can be seen in table No. 1 it is evident that coefficient of correlation of empathy dimension of emotional intelligence with total metacognitive skills is found to be 0.130.The calculated coefficient of correlation is positive and significant at 0.01 level of significance. Hence, there is significant relationship between empathy dimensions of emotional intelligence with total metacognitive skills of senior secondary science students. Therefore, hypothesis No.1.of present research work has been rejected which stated as “The empathy dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students.

From the above Table No. 1 it is evident that coefficient of correlation of social skills dimension of emotional intelligence with total metacognitive skills is found to be 0.087.The calculated coefficient of correlation is positive and not significant. Hence, there is not significant relationship between social skills dimension of emotional intelligence with total metacognitive skills of senior secondary science students.Therefore, hypothesis No.1 of present research work has been selected which stated as, “The social skills dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students

As can be seen in Table No.1 it is evident that coefficient of correlation of self-actualization dimension of emotional intelligence with metacognitive skills is found to be 0.141.The calculated coefficient of correlation is positive and significant at 0.01 level of significance. Hence, there is significant relationship between self-actualization dimension of emotional intelligence with total metacognitive skills of senior secondary science students.Therefore, hypothesis No.1 of present research work has been rejected which stated as, “The self actualization dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students."

From the above Table No.1 it is evident that coefficient of correlation of transcendence dimension of emotional intelligence with total metacognitive skills is found to be 0.026.The calculated coefficient of correlation is positive and not significant. Hence, there is not significant relationship between transcendence dimensions of emotional intelligence with total metacognitive skills of senior secondary science students.Therefore, hypothesis No.1 of present research work has been selected which stated as “The transcendence dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students.

From the above Table No. 1 it is evident that coefficient of correlation of emotional unity dimension of emotional intelligence with total metacognitive skills is found to be 0.045.The calculated coefficient of correlation is positive and not significant. Hence, there is not significant relationship between emotional unity dimension of emotional intelligence with total metacognitive skills of senior secondary science students.Therefore, hypothesis No.1 of present research work has been selected which stated as, “The emotional unity dimension of emotional intelligence is not significantly correlated with total metacognitive skills of senior secondary science students.

DISCUSSION

In the present research study was conducted to correlation the senior secondary science students on the basis of emotional intelligence and its dimensions with metacognitive skills and its dimensions. The results revealed that there is significant relationship between total emotional intelligence with total metacognitive skills of senior secondary science students. It has been also observed that There is significant relationship between total emotional intelligence with planning, Implementation, monitoring and evaluation dimension of metacognitive skills of senior secondary science students. While going through the Table, it is observed that There is significant relationship between self –awareness, empathy and self-actualization dimension of

emotional intelligence with total metacognitive skills of senior secondary science students, on composite score, There is not significant relationship between emotional stimuli, emotion recognition self-management, social skills, transcendence and emotional unity dimension of emotional intelligence with total metacognitive skills of senior secondary science students. Researchers reported that Emotional Intelligence was positively and significantly correlated with teaching satisfaction (Pervaiz et al.2019). It has been also observed that the relationship between emotional characteristics such as perception, control, use and understanding of emotions and characteristics of physical and psychological health and found that emotional intelligence was negatively associated with poor general health, smoking and drinking behaviors (Tsaousis, I. & Nikolaou, I.2005). a significant positive correlation among learner's academic performance and metacognitive awareness, a significant variance in metacognition awareness of learners and no significant difference in metacognition awareness among boys and girls across all academic success". (Zulkiply, Norehan 2006) The finding represent meaningful difference between males and females in three variables, in fact the performance of male students was better than females in met cognitive capabilities and problem solving but the store of female students was higher than males in emotional intelligence skills the result of this study reveal that, national education system of any country must consider a specific and noticeable position to develop learners non cognitive variables, such as met cognitive capabilities and emotional intelligence skills at all educational levels (Sharsi M., Kazemi F and Jafari M., 2012). Metacognitive skills enable planning, setting goals, initiating work, sustaining future oriented problem solving activities, monitoring and managing progress on tasks to detect and correct errors and keeping track of the effect of one's behavior on others Gupta & Suman (2000).

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