



NEED FOR COGNITION AND TRAIT EMOTIONAL INTELLIGENCE IN RELATION TO ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY STUDENTS

P. Revathy and N. Kalai Arasi

This study investigates the need for cognition and trait emotional intelligence of higher secondary students and their relationship to academic achievement. This study also examined the effect of some demographic variables like gender, locale, medium of instruction, order of birth of students on the chosen variables. The study employed a survey method for data collection. The sample comprised 313 (150 boys and 163 girls) higher secondary students. The Trait Emotional Intelligence Questionnaire-short form (TEIQue-SF; Petrides, 2009) and Need for Cognition Scale (Cacioppo et al., 1984) were used for the study. The results revealed that boys and girls are similar in their need for cognition and trait emotional intelligence. Also, girls outperformed boys academically. Results also show that trait emotional intelligence has a significant effect on academic achievement. There is also a statistically significant relationship between the need for cognition and trait emotional intelligence.

KEYWORDS: Cognition, Trait Emotional Intelligence, Academic Achievement, Higher Secondary Students, Trait Emotional Self-Efficacy

INTRODUCTION

Academic achievement is viewed as a multidimensional construct that encompasses the ability and performance of the student. According to [Wang, Haertel, and Walberg \(1993\)](#) review of the empirical literature on the correlates and

P. Revathy ✉

Research Scholar, N.K.T. National College of Education for Women, Chennai, India.

Email: harshitharevathy@gmail.com

N. Kalai Arasi

Associate Professor, N.K.T. National College of Education for Women, Chennai, India.

Email: kalaiarasin@gmail.com



predictors of academic achievement indicated that student individual characteristics exhibit the most significant direct influence on achievement. Identifying differences among individuals and their tendency to engage in and enjoy thinking emerged early in the history of personality and social psychology and was developed in a persuasive manner in the experiments on the need for cognition by [Cohen, Stotland, and Wolfe \(1955\)](#). The need for cognition (NFC) is described as “a need to structure relevant situations in meaningful and integrated ways. It is a need to understand and make reasonable the experimental world” [Cohen et al. \(1955\)](#). [Cacioppo and Petty \(1982\)](#) adopted the term need for cognition in deference to the early work of Cohen and his colleagues and proposed that it is a stable individual difference personality trait.

The need for cognition is described as “an individual’s tendency to engage in and enjoy effortful cognitive activities” ([Cacioppo, Petty, & Kao, 1984](#)). People high in NFC engage themselves in cognitively challenging activities without external motivation, while those low in NFC prefer to engage in cognitive tasks only when they have a good reason to do so ([Cacioppo & Petty, 1982](#)). According to [Luong et al. \(2017\)](#) students with a strong need for cognition make use of elaborative, deep, and inclusive learning strategies which translate into a deeper understanding of information and good performance. Thus, the participants who scored high on the need for cognition scale were more likely to perform better academically than those with low need for cognition ([Sadowski & Gülgös, 1996](#)). High NFC was found to be associated with course achievements ([Bertrams & Dickhäuser, 2009](#); [Sadowski & Gülgös, 1996](#)) and university grade point average ([Grass, Strobel, & Strobel, 2017](#)).

Emotional intelligence is a construct that involves ‘the ability to monitor one’s own and other’s emotions, to discriminate among them and to use the information to guide one’s thinking and actions’ ([Mayer, Caruso, & Salovey, 1999](#)). It is considered as a vital factor in the workplace, in academic performance at school, and at home ([Goleman, 1998](#)). According to [Petrides and Furnham \(2001\)](#), Emotional intelligence (EI) is divided into two types. They are trait EI and ability EI. Trait EI (or trait emotional self-efficacy) refers to “a constellation of behavioural dispositions and self-perceptions concerning one’s ability to recognize, process, and utilize emotion-laden information” ([Petrides, Frederickson, & Furnham, 2004](#)) and has sometimes been referred to as emotional self-efficacy ([Petrides & Furnham, 2001](#)), or what one believes about his or her ability to perceive and make use of emotions. Whereas ability EI (cognitive-emotional ability) refers to “one’s actual ability to recognize, process, and utilize emotion-laden information” [Petrides et al. \(2004\)](#)

The trait EI model ([Petrides & Furnham, 2001](#)) comprises four interrelated facets such as well-being, self-control, emotionality and sociability. Well-

being pertains to dispositional mood (e.g., trait happiness and optimism), self-control pertains to the regulation of emotions and impulses (e.g., emotion control, stress management, impulse control), emotionality pertains to the perception and expression of emotions (e.g., social awareness, emotion management, assertiveness) and sociability pertains to the interpersonal utilization and management of emotions (e.g., emotion perception, and expression, trait empathy).

Trait Emotional Intelligence (trait EI) or Trait Emotional Self-efficacy especially deals with people's perceptions about their emotions. Every individual will have emotions and tend to reflect them in any particular situation in everyday life. Some may use and regulate their emotions within themselves and in others at appropriate places and times and some may not. As such the emotional functioning of students finds a significant place to cope up with the examination and even curricular and co-curricular activities they involve. To adapt to the situations and maintain well-being, to meet the educational demands as well as demands of the society the students have to be good and efficient in terms of understanding, regulating, controlling, and expressing their emotions. Thus, emotional self-efficacy may play a significant role in students emotional self-management, which in turn brings endeavour in their academic activities.

REVIEW OF LITERATURE

Studies Related to Need for Cognition

A study conducted by [Cazan and Indreica \(2014\)](#) explored the relationship between the need for cognition and approaches to learning. From the study results, it was inferred need for cognition has statistically significant indirect effects on academic performance. Hence, it is evident that the need for cognition stimulates the academic performance of students.

[Powell and Nettelbeck \(2014\)](#) sought to explore the relationship between intellectual curiosity variables and academic achievement. For this purpose, four intellectual curiosity measures were selected and one among them was Need for Cognition (NFC). Results of this study revealed a positive relationship between academic achievement and the need for cognition as well as with other intellectual curiosity measures chosen for the study. [Neigel, Behairy, and Szalma \(2017\)](#) found no significant relationship between the need for cognition and students grade point average (GPA).

[Grass et al. \(2017\)](#) explored the role of the need for cognition (NFC) in academic success with a sample of 396 students from a German university. The study results revealed a small positive correlation between NFC and Uni-

versity student grade point average (GPA). Stedman et al. (2009) also observed similar results in their study examined the relationship between critical thinking disposition and the need for cognition. The study results showed a low positive correlation between the need for cognition and academic achievement and a moderate correlation between critical thinking disposition and need for cognition. This study results in turn assist the educators to develop a curriculum, which engage students to desire, discover and address complex tasks.

Concerning previous research studies carried out in the area of need for cognition, it showed a significantly high positive relationship (Akpur, 2017; Elias & Loomis, 2002), whereas some meta-analyses study results identified weak to moderate (Richardson, Abraham, & Bond, 2012; von Stumm & Ackerman, 2013) relationship between the need for cognition and the academic achievement of students.

Studies Related to Trait Emotional Intelligence

Parker, Creque, et al. (2004) investigated the relationship between emotional intelligence and academic achievement among high school students in Huntsville, Alabama. The respondents comprised 667 students within the age range of 14 to 18 years old. It was found that academic achievement associated with most of the dimensions of emotional intelligence. Further, the findings of the study revealed that overall EI was found to be a significant predictor of academic success.

Another study conducted by Parker, Summerfeldt, Hogan, and Majeski (2004) was a longitudinal study found to examine the relationship between emotional intelligence and academic achievement. A sample of 372 Students completed the short form of the Emotional Quotient Inventory (Bar-On, 2002) at the beginning of the academic year. At the end of the academic year, emotional intelligence variables were matched with the students' grade point average (GPA). As a result, academic success was found to be associated with several dimensions of emotional intelligence. This study suggested that intrapersonal, adaptability, and stress management abilities are the significant factors in the successful transition from high school to university.

Downey, Mountstephen, Lloyd, Hansen, and Stough (2008) in their study on Emotional intelligence and scholastic achievement in Australian adolescents used Swinburne University Emotional Intelligence Test (SUEIT; Palmer & Stough, 2001) in order to measure emotional intelligence. The sample consisted of 209 secondary students (12 - 17 years of age) in Victoria, Australia. It was found that Emotional intelligence (EI) was positively associated with academic performance. The study suggests that EI as part of the school curriculum might improve social/life skill development and emotional competencies in

concurrency with academic performance. Emotional intelligence emerged as a significant predictor of academic achievement in a study carried out by [Fernandez, Salamonsen, and Griffiths \(2012\)](#) with a sample of 81 university students in Sydney. This study suggested that higher levels of awareness and understanding of their own emotions have a positive impact on students' academic achievement.

A study by [Lawrence and Deepa \(2013\)](#) reported that there was no significant relationship between emotional intelligence and academic achievement of high school students. Further, there was no significant difference found between male and female high school students in their emotional intelligence. It was elucidated in the study as the level of emotional intelligence of the high school students is average their levels of academic achievement are also found to be average.

[Chis and Rusu \(2016\)](#) examined existent research studies to understand the relation between emotional intelligence (EI) and academic achievement of adolescents aged between 12-20 years in public schools. Results of the reviewed studies revealed that i) most of the studies suggested a significant association between overall EI and academic achievement. ii) Academic achievement was generally assessed using grade point average (GPA), for various periods of time and different academic disciplines. iii) Self-report instruments were used in the majority of the studies in order to assess EI. Finally, the results of the systematic review suggested that implementing EI development program might help educators to identify the needs and emotional competencies and endorse the growth of emotional skills among adolescent students.

A potential relationship between trait emotional intelligence and academic performance was analysed by [Wagner \(2019\)](#). The academic grade point average earned by the students in their first semester was considered in the study. The study results illustrated no significant relationship between trait emotional intelligence and first-year academic success of students. It was observed that the lower sample size affected the exact calculation of trait EI correlation to academic success in this research study.

A preponderance of the literature identified Trait EI was also an important factor in the academic achievement of university and high school students ([Austin, 2005](#); [Downey et al., 2008](#); [Rodeiro, Emery, & Bell, 2012](#)). Further, attempts made to develop trait EI assist the individuals to improve their academic achievement as well as assist them to plan and choose their career ([Qualter, Gardner, Pope, Hutchinson, & Whiteley, 2012](#); [Sanchez-Ruiz, Mavroveli, & Poullis, 2013](#)).

NEED FOR THE STUDY

Education is contemplated as the index of every student's future. In this competitive era, the parents, teachers, school administrators, educational policy-makers are concerned with due regard to the academic achievement of students. Especially in higher secondary level, it holds a remarkable position because based on his/her academic marks every student can select a course in various fields to pursue their higher education. In earlier decades, intellectual and ability factors have been considered as predictors of academic achievement among many researchers because they determine an individual's capacity to adapt to novel problems and situations in life.

According to Goleman (1995), only 20% of a person's success attributes to IQ. Different research studies have hinted at the necessity to go beyond IQ to capture the remaining 80% of success. The selection of the research problem of this study emerged out after a long quest of the review of literature concerning the academic success attributes other than IQ. The review of the related literatures divulged that personality traits are the one which reflect people's characteristic patterns of thoughts, feelings, and behaviours influence academic success apart from cognitive factors. Personality traits such as conscientiousness (Busato, Prins, Elshout, & Hamaker, 2000; Chamorro-Premuzic & Furnham, 2003; Fabio & Busoni, 2007; Poropat, 2009; Trapmann, Hell, Hirn, & Schuler, 2007), openness to experience Poropat (2009) revealed positive relationship with scholastic success in many studies. With this aid, it was found many researchers were carried out with big five personality traits and there were scant research studies concerning the two other constructs such as need for cognition and trait emotional intelligence which may contribute independently to academic success. Further, among the models of emotional intelligence, trait-based emotional intelligence was chosen in this study as it is clearly conceptualized as a personality trait and the domain of trait EI lies outside the taxonomy of human cognitive ability Carroll (1993).

Moreover, there were no research studies found in the Indian context concerning the variables trait-based emotional intelligence and the need for cognition and their influence on academic achievement of higher secondary students.

Therefore, the present study intended to investigate the need for cognition i.e., how every student enjoys and engages themselves in effortful academic activities as well as trait emotional intelligence i.e., how every student regulates their emotions within themselves and others to handle academic-related activities and performances.

OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To find out whether there is any significant relationship among need for cognition, trait emotional intelligence and academic achievement of higher secondary students.
2. To find out whether there is any significant difference in need for cognition, trait emotional intelligence and academic achievement of higher secondary students with respect to gender, locale, medium of instruction and order of birth.

HYPOTHESES OF THE STUDY

This study intended to investigate the following hypotheses:

1. Need for cognition, trait emotional intelligence and academic achievement of higher secondary students will be moderate.
2. There exists no significant difference between higher secondary boys and girls with respect to:
 1. Need for cognition
 2. Trait emotional intelligence
 3. Academic achievement
3. There exists no significant difference between higher secondary Tamil and English medium students with respect to:
 1. Need for cognition
 2. Trait emotional intelligence
 3. Academic achievement
4. There exists no significant difference between higher secondary students in rural and urban schools with respect to:
 1. Need for cognition
 2. Trait emotional intelligence
 3. Academic achievement

5. There exists no significant difference among higher secondary students who vary in order of birth with respect to:

1. Need for cognition
2. Trait emotional intelligence
3. Academic achievement

6. There exists a significant relationship between need for cognition, trait emotional intelligence and academic achievement of higher secondary students.

SAMPLE FOR THE STUDY

A normative survey method has been employed for this study. The Stratified random sampling technique was used, and the sample of the study consisted of 313 higher secondary students (150 boys and 163 girls) who were studying in various schools of Chennai, Tamil Nadu.

TOOLS USED

A personal data sheet was designed to collect basic information from the students like name, gender, class, medium of instruction, locality of the school, birth order, etc. The Need for Cognition Scale ([Cacioppo et al., 1984](#)) and The Trait Emotional Intelligence Questionnaire-short form ([Petrides, 2009](#)), were the tools used for the study. To measure the achievement of higher secondary students the total marks scored by them in the half-yearly examination was considered.

Need for Cognition Scale

The 18-item short form of Need for Cognition Scale developed by [Cacioppo et al. \(1984\)](#) was administered to measure the individual's engagement in effortful cognitive thinking. The students were asked to give responses on a 5-point Likert-type scale, ranging from extremely uncharacteristic of me (1) to extremely characteristic of me (5). The response provided by the students describes the extent to which they agree with each statement about the satisfaction they gain from thinking. The maximum possible score is 90 and the minimum score is 18.

Trait Emotional Intelligence Questionnaire

The Trait Emotional Intelligence Questionnaire developed by [Petrides \(2009\)](#) was administered to measure global trait emotional intelligence. It consists of 30 items on a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The TEIQue-SF covers 15 distinct facets, grouped in four main factors (i.e., well-being, emotionality, sociability, and self-control) and is derived from the full form of the TEIQue.

ANALYSIS AND INTERPRETATION OF DATA

In the present study, the data collected were analysed using IBM SPSS Statistics 25. Descriptive statistics were employed to calculate the mean and standard deviation, Independent sample t-test, and Analysis of Variance (ANOVA) was conducted to compare the means of variables considered in the study. Correlation analysis was conducted to analyse the relationship between the variables chosen for the study.

Hypothesis 1:

Need for cognition, trait emotional intelligence and academic achievement of higher secondary students will be moderate.

Table 1

Mean and Standard Deviation of Need for Cognition, Trait Emotional Intelligence and Academic Achievement of Higher Secondary Students.

Variable	N	Max Score	Mean	SD	% of Mean
Need for Cognition	313	90	54.96	7.04	61.06%
Trait Emotional Intelligence	313	210	128.01	18.38	63.68%
Academic Achievement	313	600	400.54	208.48	66.75%

Table 1 shows that the mean score of need for cognition is 54.96 (61.06% of the maximum score), trait emotional intelligence is 128.01 (63.68% of the maximum score) and academic achievement is 400.54 (66.75% of the maximum score). Further, as the average mean scores were around 60 percent it was inferred that the need for cognition, trait emotional intelligence, and academic achievement of higher secondary students is moderate.

Hypothesis 2:

There exists no significant difference between higher secondary boys and girls with respect to need for cognition, trait emotional intelligence, and academic achievement.

Table 2

Descriptive Statistics and t-test Results for Gender.

Variable	Boys (N=150)		Girls (N=163)		t	p
	Mean	SD	Mean	SD		
Need for Cognition	55.13	6.91	54.83	7.16	0.36	0.712
Trait Emotional Intelligence	127.79	17.11	128.18	19.39	0.19	0.849
Academic Achievement	359.56	179.82	433.69	224.14	3.17	0.001*

*significant at 0.01 level

It can be observed from Table 2 that the mean difference between higher secondary boys and girls with respect to need for cognition [$t = 0.369$; $p = .712$] and trait emotional intelligence [$t = 0.191$; $p = .849$] were not found to be statistically significant. This shows that boys and girls are similar in their need for cognition and trait emotional intelligence. Further, the academic achievement of higher secondary students [$t = 3.173$; $p = .001$] was found to be statistically significant at 0.01 level. It was concluded from the mean values that the girl students achieve academically higher than boys. Hence, the formulated hypothesis there exists no significant difference between higher secondary boys and girls with respect to need for cognition and trait emotional intelligence was accepted and the formulated hypothesis there exists no significant difference between boys and girls with respect to academic achievement was not accepted.

Hypothesis 3:

There exists no significant difference between higher secondary Tamil and English medium students with respect to need for cognition, trait emotional intelligence, and academic achievement.

Results in Table 3 show that higher secondary English and Tamil medium students have been manifesting significant difference with respect to need for cognition [$t = 1.995$; $p < .05$], trait emotional intelligence [$t = 5.151$; $p < .01$], and academic achievement [$t = 9.170$; $p < .01$]. Further, the need for cognition, trait

Table 3**Descriptive Statistics and t-test Results for Medium of Instruction.**

Variable	Tamil (N=140)		English (N=173)		t	p
	Mean	SD	Mean	SD		
Need for Cognition	54.09	6.36	55.68	7.49	1.99	0.047*
Trait Emotional Intelligence	122.29	13.34	132.64	20.51	5.15	0.000**
Academic Achievement	293.79	80.23	486.92	238.45	9.17	0.000**

*significant at 0.05 level **significant at 0.01 level

emotional intelligence, and academic achievement of higher secondary students pursuing education in English medium are higher than those of Tamil medium.

Hence, the formulated hypothesis there exists no significant difference between higher secondary English and Tamil medium students with respect to need for cognition, trait emotional intelligence and academic achievement was not accepted.

Hypothesis 4:

There exists no significant difference between higher secondary students in rural and urban schools with respect to need for cognition, trait emotional intelligence, and academic achievement.

Table 4**Descriptive Statistics and t-test Results for Locality of Schools.**

Variable	Rural (N=150)		Urban (N=163)		t	p
	Mean	SD	Mean	SD		
Need for cognition	54.28	6.80	55.60	7.223	1.65	0.099
Trait Emotional Intelligence	123.10	14.67	132.52	20.24	4.67	0.000*
Academic Achievement	280.96	77.08	510.58	229.83	11.64	0.000*

*significant at 0.01 level

From Table 4 it is evident that the mean difference [$t=1.654$; $p=.09$] between the students studying in rural and urban schools with respect to need for

cognition was not found to be statistically significant. It was inferred that the mean difference between higher secondary students studying in rural and urban schools with respect to trait emotional intelligence [$t=4.679$] and academic achievement [$t=11.647$] was statistically significant at $p<.01$ level.

Thus, the higher secondary students studying in schools located in urban area found to have higher trait emotional intelligence and scored high in academics compared to students studying in rural area schools. Hence, the formulated hypothesis there exists no significant difference between higher secondary students in rural and urban schools with respect to need for cognition was accepted and the formulated hypothesis there exists no significant difference between higher secondary students in rural and urban schools with respect to trait emotional intelligence and academic achievement was not accepted.

Hypothesis 5:

There exists no significant difference among higher secondary students who vary in order of birth with respect to need for cognition, trait emotional intelligence, and academic achievement.

It could be interpreted from Table 5 that the firstborn, second born and students with the order of birth three and above do not differ significantly [$F=1.096$; $p=.35$] with respect to the need for cognition. It was therefore concluded that the students first, second, third and above order of birth are similar in need for cognition.

The firstborn and second born students exhibit higher trait emotional intelligence then followed by students with order of birth three and above and the mean difference between the groups were found to be highly significant [$F=4.142$; $p<.01$]

Further, the first-born students were found to achieve academically higher than their siblings and the mean difference between the groups were found to be highly significant at [$F=4.873$; $p<.01$].

Hence, the formulated hypothesis there exists no significant difference among higher secondary students who vary in order of birth with respect to need for cognition was accepted. Further, the formulated hypothesis there exists no significant difference among higher secondary students who vary in order of birth with respect to trait emotional intelligence and academic achievement was not accepted.

Table 5
Descriptive Statistics and t-test Results for Order of Birth.

Variable	1 st Born (1)		2 nd Born (2)		3 rd & Above Born (3)		F	p	Sig. Gp. Diff.
	Mean	SD	Mean	SD	Mean	SD			
Need for Cognition	55.44	6.75	54.57	7.00	53.91	8.21	1.09	0.350	None
Trait Emotional Intelligence	129.17	19.58	129.42	17.27	118.74	14.84	4.14	0.007*	(1,3) & (2,3)
Academic Achievement	445.95	237.90	372.11	181.66	328.39	127.48	4.87	0.003*	(1,2) & (1,3)

*significant at 0.01 level, 1st born (N=143), 2nd born (N=132), 3rd & above born (N=38) Gp: Group

Hypothesis 6:

There exists a significant relationship among need for cognition, trait emotional intelligence and academic achievement of higher secondary students.

Table 6

Summary of Correlations for Study Variables.

Variable	Need for Cognition	Trait Emotional Intelligence	Academic Achievement
Need for Cognition	1.000	0.340**	0.081
Trait Emotional Intelligence	-	1.000	0.227**
Academic Achievement	-	-	1.000

**significant at 0.01 level

From the data in Table 6 it is evident that there is a significant positive relationship between trait emotional intelligence and academic achievement [$r=0.22$] at $p<.01$ level. It was also noted that the need for cognition showed no significant correlation [$r=0.08$] with academic achievement. Therefore, it was concluded that there is no significant relationship between the need for cognition and academic achievement.

But the need for cognition had presented a different picture with the independent variable trait emotional intelligence that is; it showed a significant positive correlation [$r= 0.34$] at $p<.01$ level. From this, it was clear that the independent variables are significantly related to each other. Hence, the formulated hypotheses there exists a significant relationship between (i) trait emotional intelligence and academic achievement and (ii) need for cognition and trait emotional intelligence were retained and the formulated hypothesis there exists a significant relationship between the need for cognition and academic achievement was not retained in this study.

DISCUSSION AND CONCLUSION

The results of the study plausibly described the relationship exists between the criterion and the predictor variables chosen for the study. It is noted that the relationship between the need for cognition and trait emotional intelligence was statistically significant whereas the relationship between the need for cognition and academic achievement was not significant. This result supported

the earlier findings on the relationship between need for cognition and academic success (Neigel et al., 2017) and contradicted the study findings that there is a significant relationship between students' levels of need for cognition and their academic achievement (Akpur, 2017; Luong et al., 2017; Richardson et al., 2012; von Stumm & Ackerman, 2013). According to Elias and Loomis (2002), the contribution of need for cognition to academic achievement lends credence to the belief that if students enjoy and seek out academic tasks, it should be reflected in their academic performance.

Hence, the results of the study implied that most of the students are just skimming the surface of the content apart from learning in-depth and understanding the basic concepts. Thus, the students high in need for cognition are intrinsically motivated and involved in effortful cognitive activities whereas others low in need for cognition require external motivation otherwise they rely on less effortful cognitive tasks (Cacioppo et al., 1984). It is observed that, cognitive efforts by students depend on their need for cognition (Zhang & Buda, 1999).

Further, the present study revealed a significant relationship between the trait emotional intelligence and academic achievement found to be congruence with the earlier studies (Ferrando et al., 2011; Perera & DiGiacomo, 2013; Sanchez-Ruiz et al., 2013) and contradicted with the findings that the total effect of trait emotional intelligence on achievement was not significant (Mavroveli & Sánchez-Ruiz, 2011; Wagner, 2019).

The present study results confirmed that people who ward off negative emotions associated with test-taking and examination and aware of their emotions and perceive themselves as being able to use emotions to solve problems seem to achieve better scholastic performance. To further corroborate the result, emotionally intelligent individuals encompass the feeling of self-confidence, goal-oriented and independently strive to enhance maximum development of their abilities, capabilities and talents (Bar-On, 1997).

In addition, it was unveiled that both boys and girls are similar in trait emotional intelligence which shows that both the gender can understand and regulate their emotions within themselves and will be able to cope with the academic needs and come out in flying colours.

Designing and implementing EI development programmes for adolescent students might help educators to effectively identify students' emotional competencies, and needs and promote the growth of emotional skills in educational environment (Chis & Rusu, 2016) and enhance students' academic achievement (Adeyemo, 2007).

In the present situation, most of the students are appearing for competitive exams if they tend to have a tendency to enjoy and engage in effortful

cognitive activities it facilitates them to succeed in future endeavours. Therefore, this study suggests that in school settings (i) motivational sessions can be conducted by the eminent personalities (ii) the teacher can include various application-oriented questions in exams and motivate the students to attend it.

REFERENCES

- Adeyemo, D. A. (2007). Moderating Influence of Emotional Intelligence on the Link Between Academic Self-efficacy and Achievement of University Students. *Psychology and Developing Societies*, 19(2), 199-213. <https://doi.org/10.1177/097133360701900204>
- Akpur, U. (2017). The Predictive degree of university students levels of metacognition and for Cognition on their academic achievement. *European Journal of Foreign Language*, 2(2), 52-62. <https://doi.org/10.5281/zenodo.569538>
- Austin, E. J. (2005). Emotional intelligence and emotional information processing. *Personality and Individual Differences*, 39, 403-414.
- Bertrams, A., & Dickhäuser, O. (2009). High-school students' need for cognition, self-control capacity, and school achievement: Testing a mediation hypothesis. *Learning and Individual Differences*, 19(1), 135-138. <https://doi.org/10.1016/j.lindif.2008.06.005>
- Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. *Personality and Individual Differences*, 29(6), 1057-1068. [https://doi.org/10.1016/s0191-8869\(99\)00253-6](https://doi.org/10.1016/s0191-8869(99)00253-6)
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42(1), 116-131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The Efficient Assessment of Need for Cognition. *Journal of Personality Assessment*, 48(3), 306-307. https://doi.org/10.1207/s15327752jpa4803_3
- Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. Cambridge.
- Cazan, A.-M., & Indreica, S. E. (2014). Need for Cognition and Approaches to Learning among University Students. *Procedia - Social and Behavioral Sciences*, 127, 134-138. <https://doi.org/10.1016/j.sbspro.2014.03.227>
- Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality*, 37(4), 319-338. [https://doi.org/10.1016/s0092-6566\(02\)00578-0](https://doi.org/10.1016/s0092-6566(02)00578-0)

- Chis, A., & Rusu, A. S. (2016). Connecting emotional intelligence and academic achievement in adolescence: A systematic review. *The European Proceedings of Social & Behavioural Sciences*, 91-100. <https://doi.org/10.15405/epsbs.2016.12.13>
- Cohen, A. R., Stotland, E., & Wolfe, D. M. (1955). An experimental investigation of need for cognition. *The Journal of Abnormal and Social Psychology*, 51(2), 291-294. <https://doi.org/10.1037/h0042761>
- Downey, L. A., Mountstephen, J., Lloyd, J., Hansen, K., & Stough, C. (2008). Emotional intelligence and scholastic achievement in Australian adolescents. *Australian Journal of Psychology*, 60(1), 10-17. <https://doi.org/10.1080/00049530701449505>
- Elias, S. M., & Loomis, R. J. (2002). Utilizing Need for Cognition and Perceived Self-Efficacy to Predict Academic Performance1. *Journal of Applied Social Psychology*, 32(8), 1687-1702. <https://doi.org/10.1111/j.1559-1816.2002.tb02770.x>
- Fabio, A. D., & Busoni, L. (2007). Fluid intelligence, personality traits and scholastic success: Empirical evidence in a sample of Italian high school students. *Personality and Individual Differences*, 43(8), 2095-2104. <https://doi.org/10.1016/j.paid.2007.06.025>
- Fernandez, R., Salamonsen, Y., & Griffiths, R. (2012). Emotional intelligence as a predictor of academic performance in first-year accelerated graduate entry nursing students. *Journal of Clinical Nursing*, 21(23-24), 3485-3492. <https://doi.org/10.1111/j.1365-2702.2012.04199.x>
- Ferrando, M., Prieto, M. D., Almeida, L. S., Ferrándiz, C., Bermejo, R., López-Pina, J. A., ... Fernández, M.-C. (2011). Trait Emotional Intelligence and Academic Performance: Controlling for the Effects of IQ, Personality, and Self-Concept. *Journal of Psychoeducational Assessment*, 29(2), 150-159. <https://doi.org/10.1177/0734282910374707>
- Goleman, D. (1998). . In *Working with emotional intelligence*. NY: Bantam Books.
- Grass, J., Strobel, A., & Strobel, A. (2017). Cognitive investments in academic success: The role of need for cognition at university. *Frontiers in Psychology*, 8, 790-790.
- Lawrence, A., & Deepa, A. S. T. (2013). Emotional intelligence and academic achievement of high school students in Kanyakumari district. *International Journal of Physical and Social Sciences*, 3(2), 101-107.
- Luong, C., Strobel, A., Wollschläger, R., Greiff, S., Vainikainen, M.-P., & Preckel, F. (2017). Need for cognition in children and adolescents: Behavioral correlates and relations to academic achievement and potential. *Learning and Individual Differences*, 53, 103-113. <https://doi.org/10.1016/j.lindif.2016.10.019>

- Mavroveli, S., & Sánchez-Ruiz, M. J. (2011). Trait emotional intelligence influences on academic achievement and school behaviour. *British Journal of Educational Psychology*, 81(1), 112-134. <https://doi.org/10.1348/2044-8279.002009>
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27(4), 267-298. [https://doi.org/10.1016/s0160-2896\(99\)00016-1](https://doi.org/10.1016/s0160-2896(99)00016-1)
- Neigel, A. R., Behairy, S., & Szalma, J. L. (2017). Need for Cognition and Motivation Differentially Contribute to Student Performance. *Journal of Cognitive Education and Psychology*, 16(2), 144-156. <https://doi.org/10.1891/1945-8959.16.2.144>
- Parker, J. D., Creque, R. E., Barnhart, D. L., Harris, J. I., Majeski, S. A., Wood, L. M., ... Hogan, M. J. (2004). Academic achievement in high school: does emotional intelligence matter? *Personality and Individual Differences*, 37(7), 1321-1330. <https://doi.org/10.1016/j.paid.2004.01.002>
- Parker, J. D., Summerfeldt, L. J., Hogan, M. J., & Majeski, S. A. (2004). Emotional intelligence and academic success: examining the transition from high school to university. *Personality and Individual Differences*, 36(1), 163-172. [https://doi.org/10.1016/s0191-8869\(03\)00076-x](https://doi.org/10.1016/s0191-8869(03)00076-x)
- Perera, H. N., & DiGiacomo, M. (2013). The relationship of trait emotional intelligence with academic performance: A meta-analytic review. *Learning and Individual Differences*, 28, 20-33. <https://doi.org/10.1016/j.lindif.2013.08.002>
- Petrides, K. V. (2009). *Technical manual for the trait emotional intelligence questionnaires (teique)* (1st edition, 4th printing ed.). London: London Psychometric Laboratory.
- Petrides, K. V., Frederickson, N., & Furnham, A. (2004). *The role of trait emotional intelligence in academic performance and deviant behavior at school* (Vol. 36). Elsevier BV. [https://doi.org/10.1016/s0191-8869\(03\)00084-9](https://doi.org/10.1016/s0191-8869(03)00084-9)
- Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, 15(6), 425-448. <https://doi.org/10.1002/per.416>
- Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin*, 135(2), 322-338. <https://doi.org/10.1037/a0014996>
- Powell, C., & Nettelbeck, T. (2014). Intellectual curiosity may not incrementally predict academic success. *Personality and Individual Differences*, 64, 7-11. <https://doi.org/10.1016/j.paid.2014.01.045>
- Qualter, P., Gardner, K. J., Pope, D. J., Hutchinson, J. M., & Whiteley, H. E. (2012). Ability emotional intelligence, trait emotional

- intelligence, and academic success in British secondary schools: A 5year longitudinal study. *Learning and Individual Differences*, 22(1), 83-91. <https://doi.org/10.1016/j.lindif.2011.11.007>
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353-387. <https://doi.org/10.1037/a0026838>
- Rodeiro, C. L. V., Emery, J. L., & Bell, J. F. (2012). Emotional intelligence and academic attainment of British secondary school children: a cross-sectional survey. *Educational Studies*, 38(5), 521-539. <https://doi.org/10.1080/03055698.2011.643115>
- Sadowski, C. J., & Gülgös, S. (1996). Elaborative Processing Mediates the Relationship Between Need for Cognition and Academic Performance. *The Journal of Psychology*, 130(3), 303-307. <https://doi.org/10.1080/00223980.1996.9915011>
- Sanchez-Ruiz, M.-J., Mavrouveli, S., & Poullis, J. (2013). Trait emotional intelligence and its links to university performance: An examination. *Personality and Individual Differences*, 54(5), 658-662. <https://doi.org/10.1016/j.paid.2012.11.013>
- Trapmann, S., Hell, B., Hirn, J.-O. W., & Schuler, H. (2007). Meta-Analysis of the Relationship Between the Big Five and Academic Success at University. *Zeitschrift für Psychologie / Journal of Psychology*, 215(2), 132-151. <https://doi.org/10.1027/0044-3409.215.2.132>
- von Stumm, S., & Ackerman, P. L. (2013). Investment and intellect: A review and meta-analysis. *Psychological Bulletin*, 139(4), 841-869. <https://doi.org/10.1037/a0030746>
- Wagner, K. (2019). *Exploring Relationship between Trait Emotional Intelligence, Academic College Readiness, and First-Year Student Success*. Ferris State University. (Unpublished Doctoral Thesis)
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993). Toward a Knowledge Base for School Learning. *Review of Educational Research*, 63(3), 249-294. <https://doi.org/10.3102/00346543063003249>
- Zhang, Y., & Buda, R. (1999). Moderating Effects of Need for Cognition on Responses to Positively versus Negatively Framed Advertising Messages. *Journal of Advertising*, 28(2), 1-15. <https://doi.org/10.1080/00913367.1999.10673580>