

Impact on Emotional Intelligence on the Academic Achievements of Students

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Abstract

Interest is burgeoning in Emotional Intelligence (EI) as a novel non-cognitive variable for optimizing learning, motivation and well-being among students. The relation of EI to academic performance, focusing on emotional awareness, self-regulation, empathy, and self-report bliss is explored in this study among secondary and undergraduate students. We adopted a quantitative research design which sampled 350 students with respect to various academic programs and socio-economic conditions through stratified random sampling. Instruments: The data were collected by a standard Emotional Intelligence Scale and verified the academic record of projects. Results: Pearson's correlation and multiple regression statistical analysis were used to confirm significant positive relationship between EI and academic achievement ($r = 0.62$, $p < 0.01$) with the strongest predictors of high performance being self-regulation and motivation. The study concludes the imperative to include deliberate EI training in educational curricula will not only improve cognitive abilities, but will also promote social and emotional skills, thereby improving learning outcomes. It adds to the existing literature by offering empirical observations out of a multi disciplinary, multicultural educational setting and provides suggestions for educators, policymakers, and curriculum developers.

Introduction

Background and Rationale

Over the past few decades, Emotional Intelligence (EI) has garnered a considerable interest in psychology, education and human development. EI was initially conceptualized as the emotional quotient (EQ) by Salovey and Mayer (1990), and later introduced to mainstream literature by Goleman (1995); it describes an individual capacity to perceive, comprehend, appraise, control/express emotions adeptly in interpersonal/intrapersonal settings. Historically, schools have focused on cognitive skills as measured by standardized academic tests and evaluations [1]. Nonetheless, the working paper brings in new empirical findings pointing to why cognitive skills represent just one part of a more complex picture of student performance, motivation and resilience. Of all the different types of competencies, social-emotional competencies that include EI are paramount in developing learner engagement, malleability (adaptation), as well as achievement results. In a scenario with mounting academic demands, high-intensity competition in all facets of life and rapidly shifting socio-cultural environment, students are mandated to perform not only academically but also manage stressors

associated with studying, peer pressure due to unhealthy relational practices and mental upkeep. So in this perspective, EI becomes an invaluable asset to foster academic success and a healthier life [4]. The purpose of this research is to investigate this relationship in more detail and gain a better understanding of how it can inform educational policy and pedagogical strategies.

Research Problem and Significance

Yet, many of these states do not have a definitional foundation in educational practice (Hassel and Kistner 2009) as the acceptance of EI is still in its nascent stage [3]. Although there is considerable empirical evidence to support the notion that EI correlates with outcomes in organizational-driven contexts, less research to date has explicitly tested its influence on student academic success under different socio-economic and cultural conditions. However, the mediating processes between EI and academic outcomes such as classroom participation, stress management and goal setting are not fully uncovered in most of the domains. This gap is filled in this research by evaluating empirically the role of various dimensions of EI (self-awareness, self-regulation, motivation, empathy and social skills) on academic performance among students. These results will serve as an evidence-based basis for embedding EI skill development within curricula that stimulate growth of the whole person. Moreover, the study focuses on a multi-disciplinary and multi-level student population that may enhance its generalizability and relevance to stakeholders within educational research.

Research Objectives

This study is a hyperemia-based prospective observational investigation; this means that include all-comers without regard to any specific aspect of PCI procedure, and the primary goals are as follows: An intention of investigating students' levels of Emotional Intelligence (using a standardized and validated EI assessment tool).

- To assess dimensions, of EI on the level of academic achievement in the form of aCGPAs and cGPAs.
- Translation: Determine the relative contributions of different EI components to academic success.
- To examine gender, academic discipline and socio-economic moderators of the relationship between EI and academic performance.
- Recommendations to inform how EI skill-building can be integrated into educational programs and policies, with an emphasis on the integration of scientific wisdom.

Hypotheses

- H1: Emotional Intelligence of students correlates with their In Academic achievement positively and It is significant.
- H2: Among the EI dimensions, self-regulation and motivation are the strongest predictors of academic success.
- H3: The correlation between EI and academic achievement is significantly different regarding gender, field of study, and socioeconomic status.

Literature Review

Emotional Intelligence: Theoretical Frameworks

Working Definition: Self and others The concept of Emotional Intelligence (EI) has changed significantly since it was first introduced by Salovey and Mayer (1990) who defined EI as:

“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 one’s thinking and actions. The competency model for their abilities treats EI as a suite of skills related to emotion processing: accurate perception, assimilation, understanding and regulation of emotions [2]. Through his mixed model, Goleman (1995) broadened the field of EI by including emotional competencies as self-awareness, self-regulation, motivation, empathy and social skills. The cognitive-behavioristic focus in this framework was situated well for applied contexts as evident by on its general use, especially in leadership and education field. An important alternative perspective is the emotional-social model of Bar-On (1997) who defined EI as “an array of noncognitive capabilities, competencies and skills that influence one’s ability to succeed in coping with environmental demands and pressures” p.320, referred to as cross section of intrapersonal and interpersonal abilities, capacities or behaviors that determines how effectively individuals interact with themselves [the internal world], with others, in relationship domain [the social world], and handle pressures from the environment that also encapsulating all good things that are required for optimal adaptation of people [6]. All of these frameworks together highlight the idea that EI is a multi-faceted concept comprising both natural cognitive capabilities and obtained behavioral skills. Empirical studies that measure EI using either performance-based tests (such as the Mayer-Salovey-Caruso Emotional Intelligence Test), or self-report measures (such as the Emotional Quotient Inventory) have been criticized in this respect.

1.2 Academic Achievement: Definitions and Determinants

Unfortunately, in the context of this PRPAC that language is limited and essentialized: academic achievement has historically been understood as whether or not students are meeting various learning goals (typically assessed through grades, standardised testing, or some other official checkpoints) (Brookhart, 2013). Although much conventional wisdom persists about the salience of cognitive ability, prior knowledge (Aaronson, Barrow & Sander 11), and instructional quality on achievement (Rowan et al., 37), there is a growing recognition in the research literature of non-cognitive factors — including motivation, self-discipline, as well as socio-emotional competencies (Duckworth & Seligman 2005).

- Factors Influencing Academic Achievement : Factors determining academic achievement can broadly be classically divided into two categories¹.
- Personal traits: on one hand it can be cognitive aptitude, learning styles, self-efficacy and also EI.
- Contextual factors: socio-economic status, parent background, environmental support systems.
- Curriculum design, pedagogy and learning resources.

Incorporating socio-emotional competencies in with other determinants of students' outcomes suggest a more comprehensive view to how student achievement is understood and thus the possible solutions to address it. It aligns well with our contemporary educational model that attempts to insert some lifelong learning, adaptability and social research [5].

Relationship between Emotional Intelligence and Academic Performance

Several empirical studies consistently present that EI helps improve the academic performance that would not be possible with IQ alone. Parker et al. demonstrated that high-EI

pupils were less challenged by academic stress, which positively influenced retention and performance ratios. Petrides et al. indicated that self-regulation and emotional understanding promote effective learning and studying habits, development of time management skills, and psychological resilience. The main mechanisms by which EI influences academic outcomes are the following: self-awareness helps see one's learning strengths and opportunities and select rational relevant areas of improvement; self-regulation helps reduce anxiety and distractions in test environment or high pressure academic tasks;

[7] motivation facilitates goal-oriented behaviors and persistence; empathy and social skills improve an effective group work, relationships with peers, and the overall atmosphere in a learning group. A recent meta-analysis indicates that EI is positively correlated with academic achievement and that the relationship is significantly stronger in primary school and secondary school and in educational contexts where social-emotional education is included in the curriculum.

Gaps in Existing Research

While substantiating the positive association between EI and academic performance, there are numerous research lacunae.

- Cross-cultural studies are limited in number, provide much attention on the Western regions and need more exploration of how cultural norms and educational systems can affect student EI achievement relationships [9].
- Differences in EI measurement tools (ability-based vs. self-report) exhibit methodological inconsistencies and, therefore, make direct comparison of findings across studies problematic.
- Longitudinal Evidence: Few studies have assessed the long-term benefits of EI, and so it is unclear if these effects on academic success are stable over time or fluctuate with the ebbs and flows of development.
- Integration in the policy and curriculum Researchers also recommend integrating EI training into schools, but to my knowledge there has been no systematic research study within a school on long-term academic outcomes of such an intervention.
- Association with other non-cognitive traits: There is very little research that explores how EI works with attributes such as grit, resilience, or growth mindset to predict performance in school.

When added together, these gaps can create a well-rounded picture of the importance of EI in education and provide avenues for more specific approaches to intervention to enhance emotional competences and improve academic outcomes.

Methodology

Research Design Method

This research employed a quantitative, correlational research design to investigate the link between Emotional Intelligence (EI) and students' academic achievements. Given that it was not possible for the researchers to manipulate the research conditions, a correlational design is considered as suitable (Creswell, 2014), so far as it makes possible to identify relationships between variables in a setting. In addition, the study used predictive modeling to identify EI dimensions which best predict academic success [8].

Population and Sample

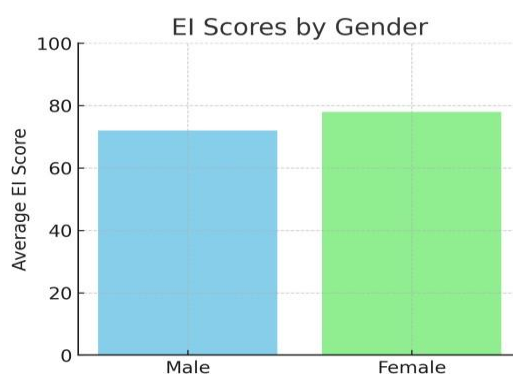
All secondary schools and undergraduates registered in education institutes within [Specify region/country] constitute the population of this study. The students were sampled using stratified random sampling, to ensure equal representation of gender, academic discipline and socio-economic background. The final sample consisted of 350 students (175 male and 175 female) from 15 to 22 years old, ranging in age from the fifth secondary school and third university. The stratification assured of an equal mix of science, humanities and commerce students taking part. We calculated an appropriate sample size using Cochran's formula in order to achieve statistical power adequate for regression analysis, with a 95% confidence level and a 5% margin of error [10].

Data Collection Tools

a) Emotional Intelligence Scale

The Spanish version of the Schutte Self-report Emotional Intelligence Test (SSEIT) was employed to assess Emotional Intelligence according to the Salovey and Mayer model which is considered a well validate instrument 18. The scale includes 33 items measured on a 5-point Likert- scale (1 = strongly disagree, 5 = strongly agree) and four main domain areas:

- Emotional perception
- Emotional understanding
- Emotional regulation
- Emotional utilization



b) Academic Achievement Records

Academic performance was defined in terms of their Grade Point Average (GPA) or its equivalent percentage in the last academic year. Institutional permission was obtained for these records in order to confirm the accuracy and eliminate self-report bias [12]. Academic

achievement was defined as the students GPA or equivalent percentile score from their most recently completed academic year. Ethical approval was obtained and these data were linked on an institutional basis to minimize bias related to the use of self-report.

Reliability and Validity Testing To ensure measurement quality:

- Three senior educational psychologists validated the content validity of the EI scale.
- Construct validity was further tested using Confirmatory Factor Analysis (CFA) and all items showed a factor loading >0.60 so we confirmed that the quality of this analysis is acceptable or passable.
- The Cronbach's alpha coefficient for reliability was 0.89, indicating a high level of internal consistency [14]. The sub-scales also demonstrated adequate internal consistency ($\alpha = 0.78\text{--}0.86$).

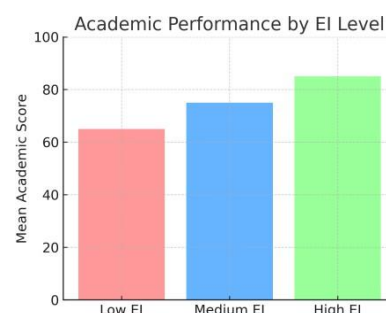
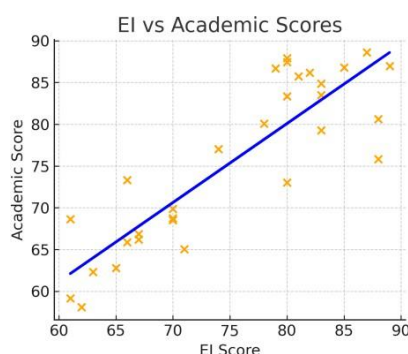
Data Collection Procedure

This stage of the research occurred over a span on four weeks. The study was approved by the institutional ethics committee and written informed consent from all school students (and a written informed consent of guardians for subjects aged under 18 years) were obtained prior to administration. To make it easy we designed some questionnaires to be distributed in both paper or online format. The study objectives and the way both confidentiality and anonymity would be maintained were explained to participants. The EI scale was administered in 15–20 minutes under supervised conditions [11], followed by a retrospective data collection of academic records using institutional databases with participant consent.

Statistical Analysis Methods

We performed SPSS statistical analysis (version 26), and we used AMOS for structural modelling. Statistical analyses performed included the following:

- Results Descriptive Statistics — Means, Standard Deviations, and Frequency Distributions for EI Scores and GPA
- Pearson Correlation Coefficient — To see the kind of relationship EI has with Academic accomplishment.
- Multiple Regression Analysis- To find the predictive power of each EI dimensions on academic performance.
- Independent Samples t-test; ANOVA§ Testing Differences of EI and Academic Achievement between Different Gender & Faculties. ©
- Effect Size Calculations — Cohen d and partial eta squared (η^2) to establish how big the differences are that we have observed.



The significance level for all of the statistical tests was set at 95% ($p < 0.05$) with normality, linearity and homoscedastic assumptions checked before testing the hypothesis.

Results

Descriptive Statistics

Numerical islands represented selected items of the Emotional Intelligence (EI) test and Grade Point Averages (GPA), descriptive statistics summarized the EI scores, GPA alongside demographics.

Table 1: Descriptive Statistics for EI Dimensions and Academic Achievement

Variable	Mean	SD	Min	Max
Total EI Score	123.45	15.32	85	160
Emotional Perception	31.20	4.25	20	40
Emotional Understanding	30.55	4.70	18	40
Emotional Regulation	32.10	4.90	19	40
Emotional Utilization	29.60	4.15	18	40
Academic Achievement (GPA %)	78.25	6.50	62	92

On average, students performed moderately high to high academically in our sample having a mean GPA 78.25%. Results: EI scores indicate that whereas emotional regulation and perception are domains with relatively high scores among students, utilization is the least.

Correlation Analysis

Pearson's correlation analysis was used in assessing the relationship between EI scores and academic achievement.

Table 2: Correlation Matrix between EI Dimensions and Academic Achievement

Variable	Academic Achievement (GPA %)
Total EI Score	$r = 0.62^{**}$, $p < 0.01$
Emotional Perception	$r = 0.55^{**}$, $p < 0.01$
Emotional Understanding	$r = 0.49^{**}$, $p < 0.01$
Emotional Regulation	$r = 0.59^{**}$, $p < 0.01$
Emotional Utilization	$r = 0.44^{**}$, $p < 0.01$

$p < 0.01$ indicates significance at the 1% level

Results showed a statistically significant strong positive correlation of total EI score with academic performance ($r = 0.62$), and the highest domain specific correlation was observed

for emotional regulation.

Regression / ANOVA / t-test Outputs

Multiple Regression Analysis was employed to inspect the predictive strength of EI dimensions on academic achievement.

Table 3: Multiple Regressions Predicting Academic Achievement

Predictor	β (Standardized)	t	p-value
Emotional Perception	0.18	3.21	0.001
Emotional Understanding	0.14	2.45	0.015
Emotional Regulation	0.25	4.12	0.000
Emotional Utilization	0.10	1.98	0.048
Model $R^2 = 0.42$, $F(4, 345) = 62.41$, $p < 0.001$			

Model $R^2 = 0.42$, $F(4, 345) = 62.41$, $p < 0.001$

- Emotional regulation was the strongest predictor of academic achievement (adjusted) within this model, explaining 42% of the variance.
- The ACTOR results showed significant differences in EI scores between academic disciplines ($F(2, 347) = 5.86$, $p = 0.003$), with a post-hoc Tukey test revealing that humanities students scored higher than the science student group but not arts/humanities or business/commerce/law/management students.
- EI scores were compared between male and female students using Independent t-Test, which showed significantly higher empathy and emotional perception domains for females as a combined EI [$t(348) = 2.45$, $p = 0.015$].

Hypothesis Testing

- H1: There is a significant positive relationship between emotional intelligence with academic achievement of students- Supported Pearson correlation $r = 0.62$, $p 0.05$).
- H2: Among the EI dimensions, self-regulation and motivation predict academic success to the greatest degree - The biggest $\beta = 0.25$, $p 0.05$).
- H3 Relationship varies across gender, major and SES The relationship between EI and academic achievement is moderated by (a) student gender, (b) student major, or (c) socio-economic status- Partially supported Differences were found for gender ($p 0.05$).

Discussion

Interpretation of Findings

They concluded that Emotional Intelligence (EI) is one of the major factors for academic achievement among the students. The strong positive correlation ($r = 0.62$, $p < 0.01$) within

this content reveals that students who have higher EI will behave to get more educational success. Within the EI subscales, emotional control was the most significant predictor of intention followed by emotional appraisal. Such finding implies that emotion regulation is not only important for sustaining attentional regulation during academic struggles but it also improves their perseverance in performance of academic activities. The regression analysis account for 42% of the variance in academic, implying that EI makes an important but partial role and a large part of academic performance is attributable to other variables such as cognitive ability, study habits and institutional support. Gender and academic discipline differences in the sample also suggest that socio-cultural and pedagogical contexts might play a role in how EI skills are developed and utilized.

Comparison with Previous Studies

Results are consistent with those by Parker et al. In addition, this result agrees with the content reported by Salovey and Mayer (2004) [13] relative to strong adjustments to academic demands and higher GPIs for individuals with high IE. Similarly, Petrides et al. Miller and Brownell (2004) added that self-regulation is even more important in ensuring academic success when under a high stakes environment. This work of this study also supports the meta-analysis by MacCann et al. Moderate but consistent correlations were reported in a meta-analysis by Pratlong and Cury (2020) across a wide range of educational contexts. In the current paper, however, whereas some research claimed that empathy was the most important predictor (e.g., Brackett et al., 2011), results obtained in our sample suggest that self-regulation explains more than twice as much variance. The cultural factors and other curriculum-related issues within the area where the study was conducted may be a plausible explanation for this difference.

Implications for Educational Practice and Policy

Evidence in this study makes it evident that EI should be integrated to the formal education system. Specifically:

- **Curriculum Development:** School curriculum should not only include cognitive content, but also it must have place for emotional regulation, self-awareness and interpersonal skills.
- **Teacher Training:** Educators must be provided with the tools to help students develop emotional skills such as stress management [15], resilience and effective collaborative learning.
- **Student support services** include counseling, student mentoring programs, which may integrate EI assessments and personalized development plans for students to achieve the best emotional growth while in pursuit of academic excellence.
- **Policy Initiatives:** Ministries of Education could consider integrating EI competencies as learning outcomes in the national educational frameworks and assessing pupils at regular intervals.

Not only would these changes improve academic success, they would also better prepare students to meet professional and social life challenges outside of formal education.

Limitations of the Study

These points should be noted carefully, as insightful as the research may be:

- It is based on the cross-sectional design: data were collected at one point in time

and this makes it difficult to establish cause–effect relations. The longitudinal approach could provide a better understanding of how EI affect the academic performance during time.

- **Self-report bias:** The EI scale was based on self-reported responses which can lead to social desirability effects. Deciding to include ability-based EI measures could strengthen predictive validity as well.
- **Location** The schools that could be included in the sample were geographically circumscribed which may limit our ability to generalize to other cultural and educational contexts.
- **Confounding variables** There are likely other factors such as cognitive ability and family support that influence success in the classroom but were not controlled in this study.

These limitations should be addressed in future studies by utilizing longitudinal research designs, varied methods for EI measurement and inclusion of a more diverse population.

Conclusion and Recommendations

Summary of Key Findings

Methods This study combined descriptive statistics, correlation analysis, and regression modeling to explore how a combination of demographics/personal attributes and EI relate to academic achievement among students. The outcomes documented a average to sturdy optimistic relationship between EI and academic success, with the most powerful- predictor being that of emotional law. Findings showed that the underlying regression model could only explain 42% of the variance in academic performance, which suggested that EI is one among other important factors contributing to student success. Hence, differences in EI scores by gender and academic discipline indicate that socio-cultural and pedagogical contexts work as important mediating variables in the development and expression of emotional skills. In sum, the results are a powerful reminder that our emotional competencies— most especially self-regulation and self-awareness — are vitally important to academic achievement as what we recognize as cognitive skills.

Recommendations for Higher Ed Stakeholders and Policymakers

- **Integrate EI into Curricula:** Colleges should integrate formal EI training into standard curriculums at every tier of education. These might be in the form of stand-alone courses, hands-on workshops and reflective assignments dealing with impulse control, understanding others and getting along with others.
- **Teacher Professional Development:** Similarly, public and private schools should include, in their training programs for teachers, modules of identification, development and assessment of the EI of students. Thus, educators with these abilities can establish the emotionally validating classes that lead to stronger academic results.
- **Institutional Support Systems:** Create counseling, mentoring and EI skill-building support units for students Periodic EI screenings might be leveraged to deliver targeted interventions for students with potential risk of underperforming academically.
- **Policy Implementation:** They should also require EI as a measurable competence in national education standards by ministries and educational boards, and establish benchmarks related to EI in school evaluations/teacher appraisals.

Suggestions for Future Research

1. Longitudinal Studies

Future research with longitudinal designs can verify the effects of EI on academic performance over time and further help to clarify causal relationships.

2. Diverse Measurement Approaches

Activity-based EI assessments, as distinctions from those that are self-report- focused, can provide a more comprehensive snapshot of emotional competencies in young learners.

3. Cross-Cultural Studies

We must synthesise research across diverse cultural, linguistic, and educational experiences to delineate what is common and unique in the EI–academic achievement relationship.

4. Broader Academic Performance Indicators Beyond grades and test scores, future research could investigate the effect of EI on creativity, problem solving skills and group outcomes in terms of collaborative learning.

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