



Research Article

ASSESSMENT OF EFFECT OF EMOTIONAL INTELLIGENCE ON ACADEMIC PERFORMANCE IN MEDICAL STUDENTS

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ABSTRACT

Emotional Intelligence (EI) is the ability to understand and manage one's own and others' emotions. EI in medical students may have an effect on academic performance considering vast syllabus and short duration of course. This study aims to assess the EI in male and female medical students and assess its relation with academic scores. This study included 114 medical students who had recently appeared for 1st MBBS university examination. EI was assessed using The Schutte- Self - Report Emotional Intelligence Test (SSEIT). The university examination scores were considered for assessment of academic performance. There was no significant difference in EI scores and academic scores between male and females although both scores were higher among the females. The correlation analysis showed statistically significant positive association between EI scores and academic scores in both male and female groups. The results of the study showed that the students with better academic performance had higher emotional intelligence. This may imply that EI skills in medical students will help them to perform better academically.

Keywords: Emotional intelligence, Emotional Quotient, Academic performance, Medical students, Schutte- Self - Report Emotional Intelligence Test.

INTRODUCTION

Emotional Intelligence/ Emotional Quotient (EI) is the ability to monitor one's own and other people's emotions, to discriminate between different emotions and label them appropriately, and to use emotional information to guide thinking and behavior and to manage and/or adjust emotions to adapt to environments or achieve one's goal. Current evidences suggest that emotional intelligence is associated with academic performance but the relation between the two is still largely unexplored.

In medical education, achieving academic excellence underscores the importance of not only cognitive intelligence but also affective and interpersonal capacities. One such aspect gaining scholarly interest is emotional intelligence (EI) which Mayer & Salovey originally defined as the ability to perceive, understand, manage, and utilize emotions to facilitate thinking and behaviour [1].

Bloom's taxonomy provides a comprehensive framework for understanding the development of emotional intelligence by addressing cognitive, psychomotor, and affective domains. While the cognitive domain supports theoretical understanding of EI concepts, the psychomotor domain is relevant to the practical application of EI skills in real-life interactions. The affective domain is particularly significant, as it encompasses the internalization of values, empathy, and emotional regulation, the core components of emotional intelligence.

Although there has been extensive research on EI, inconsistency remains: some studies show no significant EI– academic performance correlation, or correlations restricted to EI subdomains rather than total EI scores. Moreover, while gender differences frequently appear with several studies indicating higher EI among female students, others report no gender differences within specific cultural settings.

As healthcare moves towards patient-centered approach, EI development within medical training is becoming crucial. EI supports academic performance along with improving mental wellbeing, professional adaptability, empathy, and long-term retention.

Given the growing recognition of emotional intelligence as a key contributor to professional competence in healthcare, it is important to understand its influence on academic success, particularly in culturally diverse and high-pressure academic environments such as medical and allied health education. Therefore, this study aims to address these gaps by evaluating emotional intelligence among MBBS students, and by exploring their relationship with academic performance.

OBJECTIVES OF THE STUDY:

- Assessment and comparison of emotional intelligence in male and female medical students.
- Assessment of correlation of EI scores with academic performance in terms of theory, practical and aggregate marks scored in university examination.

METHODOLOGY

Ethical Considerations

Prior ethical approval was obtained from the Institutional Ethics and Scientific Committee. Written Informed consent was obtained from all participants after explaining the study objectives, procedures, and confidentiality of responses.

Study Design

A cross-sectional study design was adopted to examine the relationship between emotional intelligence (EI) and academic performance among phase I undergraduate medical students.

Study Population

The study was conducted among MBBS Phase II students of 250 batch who had recently appeared for the university examination of MBBS phase I of a private medical college. All the students were invited to participate in the study. Among these 250 students few of the students did not respond to the questionnaire and few had given incomplete responses. So finally excluding all these students, the study included 114 participants. The participants were selected using a universal sampling method, and all students who consented to participate were included in the study. Students with incomplete academic records were excluded from the study.

Data Collection:

Academic Performance Data:

Academic scores were obtained from institutional records. The final score used for analysis was the aggregate of marks from three core Phase I subjects (Anatomy, physiology and Biochemistry), including both theory and practical examinations. These scores were compiled to represent the academic performance of each student. The university examination score was chosen for this study as it minimizes potential bias, given that the evaluation is conducted jointly by both internal and external examiners.

Academic performance was categorized into four distinct groups based on the aggregate percentage obtained by the students. Students securing more than 75% were classified under the Group I (Distinction category), while those scoring between 65% and 75% were placed under the Group II (First Class category). Scores ranging from 51% to 64.99% were categorized as Group III (Pass Class category). Students who scored less than 50% were classified as Group IV (Failed category).

Emotional Intelligence Assessment:

Emotional intelligence in the students is calculated using The Schutte- Self – Report Emotional Intelligence Test (SSEIT).^[13] The SSEIT is a 33-item questionnaire that uses a five-point Likert – type scale to measure Emotional intelligence traits. The instrument measures the expression of emotions (13 items), regulation of emotions (10 items) and utilization of emotions (10 items), with total scores ranging from 33 to 165.

Each item was rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total EI score was computed by summing the responses, with higher scores indicating greater emotional intelligence. Among the 33 questions item 5, item 28 and item 33 were calculated by reverse scoring.

The questionnaire was administered using Google Forms. Participants were briefed on the structure and purpose of the questionnaire and were instructed to respond based on their typical behaviour and personal experiences.

Statistical Analysis

Data were compiled and analyzed using SPSS version 20. Descriptive statistics were computed for demographic variables and mean scores. The following statistical methods were employed: Analysis of Variance (ANOVA) was used to compare emotional intelligence scores across four groups of students based on academic performance. An independent student t-test will be conducted to compare emotional intelligence scores between male and female participants. Statistical significance was set at $p < 0.05$. Pearson's correlation coefficient was calculated along with p-value to assess the correlation of emotional intelligence with theory, practical and aggregate marks in male and female students separately.

RESULTS

Table No 1: Comparison of EI scores and academic performance between male and female subjects

				Male	Female	p-value
Number (N)				31	83	0.12 #
EI scores	Mean			123.22	124.00	0.66 *
	SD			10.05	7.76	
Academic Scores	Total theory	Mean	368.03	375.55	0.53*	
		SD	60.27	57.08		
	8Total practical	Mean	235.09	235.63	0.87 *	
		SD	17.51	16.43		
	Aggregate mark	Mean	603.12	611.19	0.59 *	
		SD	74.79	71.16		
# Chi square test * Student t test						

Comparison of EI scores between male and female subjects showed higher score among the females (Male: 123.22 ± 10.05 , female: 124 ± 7.76) although the difference was not statistically significant. Academic performance as assessed by university examination scores including theory, practical and aggregate marks were also higher in female group compared to male students. But the difference did not reach the statistically significant level. (Table No. 1)

Table No 2: Gender wise correlation matrix between EI scores and academic performance

Groups	Academic performance	Emotional intelligence score	
		Correlation efficient	p- value
Males	Total theory	0.44	0.01
	Total practical	0.39	0.02
	Aggregate marks	0.45	0.01
Females	Total theory	0.25	0.02
	Total practical	0.28	0.008
	Aggregate marks	0.27	0.01

Pearson's correlation test showed significant positive association between emotional intelligence and all the determinants of academic performance in both male and female students (Table No. 2). This indicates theory, practical and aggregate marks tend to be high in the students with higher EI scores.

Table No 3: Comparison of EI scores and academic performance (aggregate marks) among four groups.

		Group I (>75%)	Group II (65-75%)	III (50 – 65%)	IV (<50%)	p- value
Total No. of students		21	52	39	2	<0.001 #
Gender	Male	4	15	11	1	< 0.001 #
	Female	17	37	28	1	<0.001 #
Aggregate marks average	Mean	703.61	632.38	526.58	420.00	<0.001 *
	SD	24.32	23.59	48.55	1.41	
EI score	Mean	126.47	124.90	121.38	113.50	<0.001 *

	SD	7.22	7.72	8.92	14.84	
# Chi square test, * One way ANOVA						

In the present study, one-way ANOVA revealed a significant difference in emotional intelligence scores among the four groups classified according to the aggregate marks. However, post hoc analysis using Tukey's test did not identify significant differences between specific groups. This outcome could be attributed to relatively small sample sizes within each group, high variability in EI scores, or modest effect sizes that were not strong enough to withstand multiple comparison adjustments. These findings highlight that while EI may vary across groups, the differences are subtle and likely influenced by individual-level characteristics rather than group categorization alone.

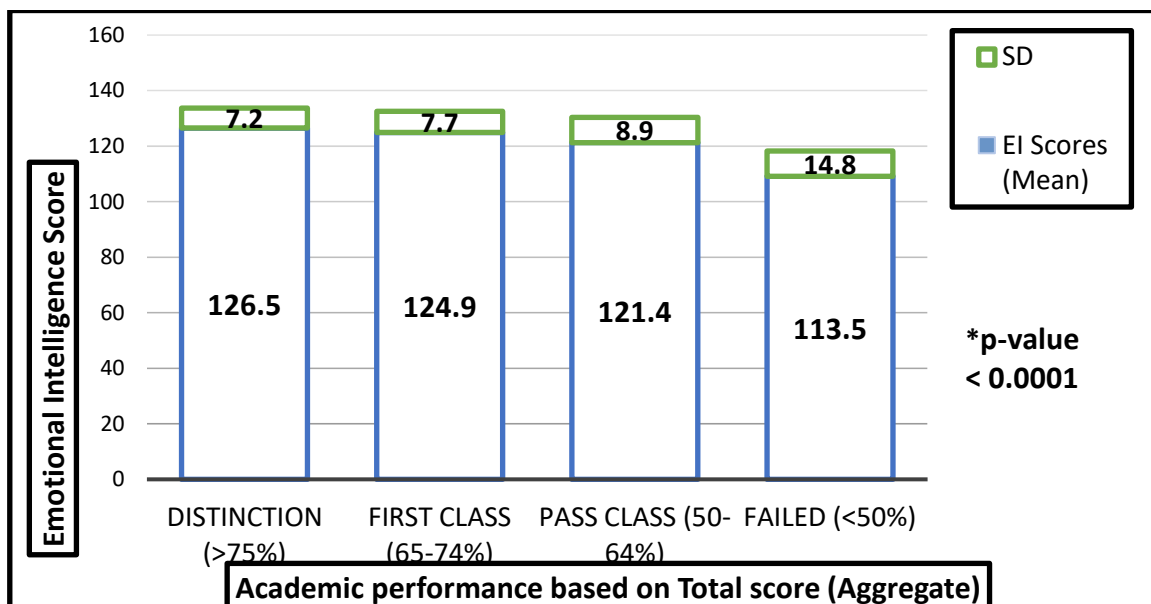
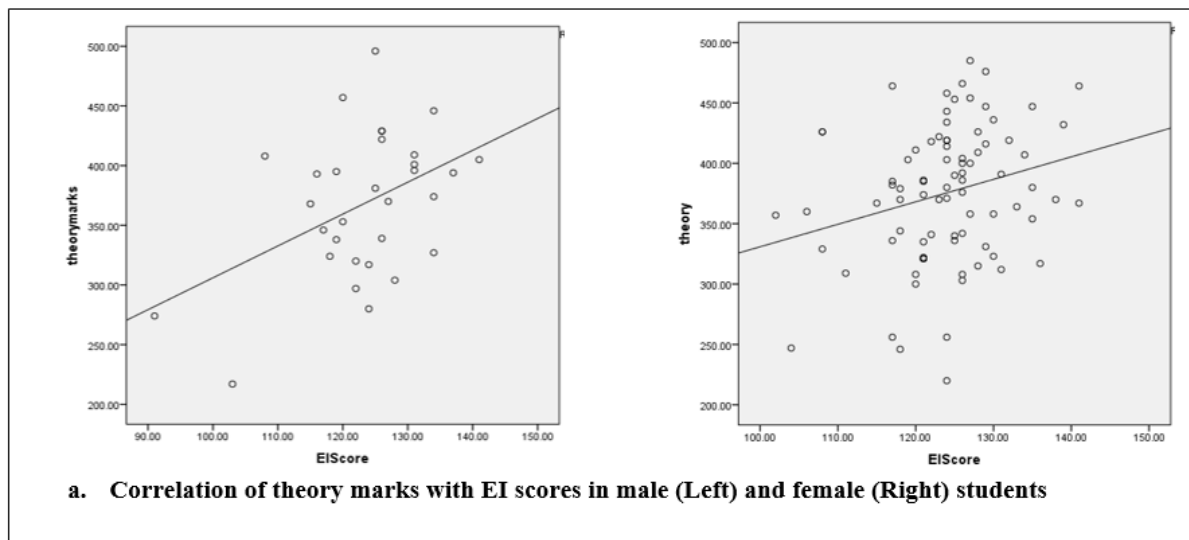


Figure 1: Comparison of EI scores among four groups of different academic performance



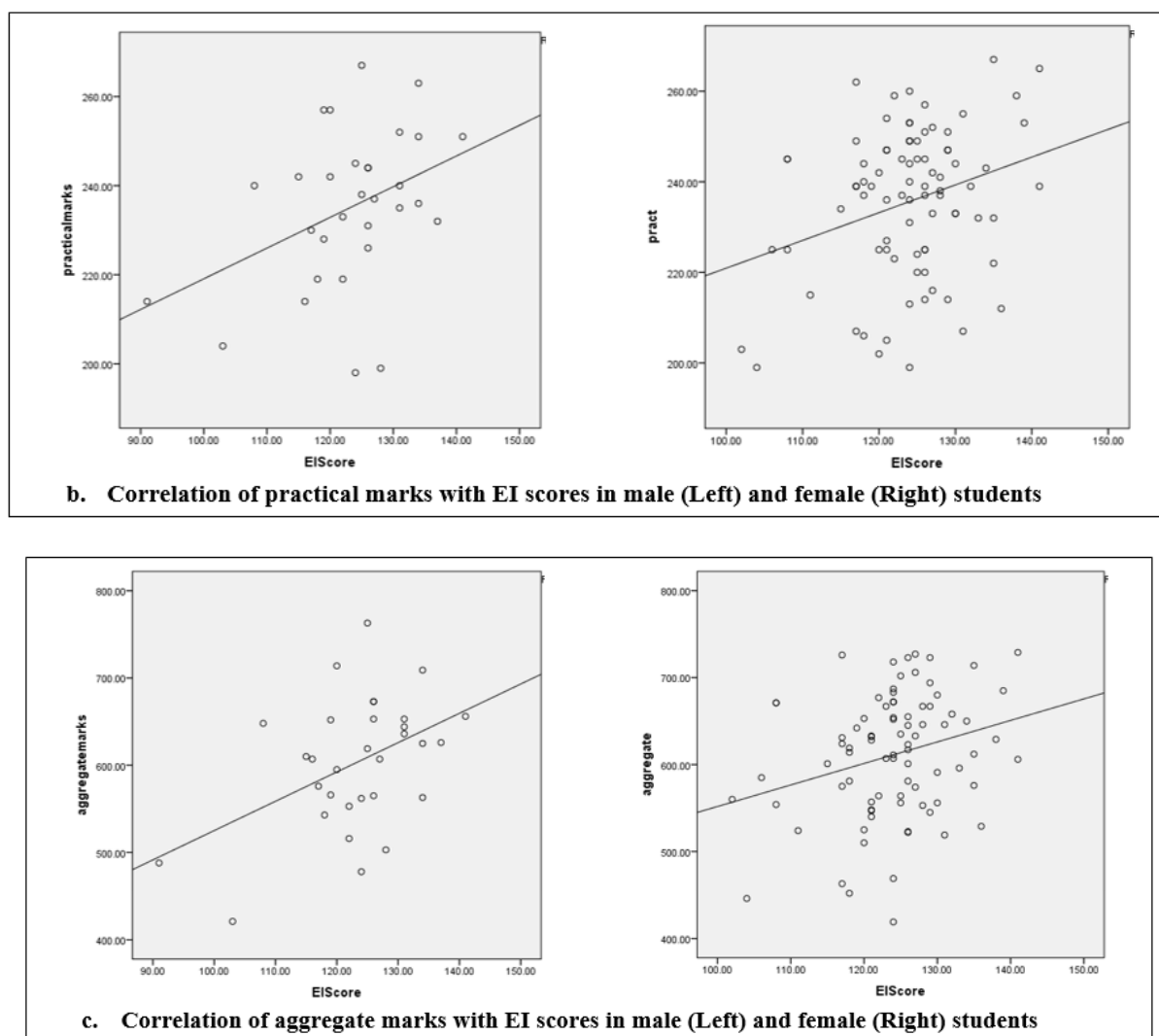


Figure 2: Graphs (a, b and c) showing correlation between theory, practical and aggregate marks with Emotional intelligence scores

DISCUSSION

In this study, we explored how emotional intelligence (EI) relates to academic performance among Phase I MBBS students. Our results showed that students with higher EI showed better performance in academics, although the strength of the relationship was relatively weak. This suggests that EI alone may not directly boost marks but plays a supporting role in how students cope with the demands of medical education. Our findings echo what many international studies have already shown that EI is positively connected to academic success. For example, a Malaysian study found that EI explained a large portion of exam performance in medical students, and other reviews have highlighted how EI contributes not only to grades but also to stress management, empathy, and professional skills.

In educational psychology literature, EI consistently predicts better academic outcomes. A meta-analysis of 158 studies ($N \approx 42,529$) showed a significant positive correlation between EI and academic success especially pronounced in humanities subjects [2]. In medical domains, several systematic reviews and cross-sectional studies support this link. For example, one review of 29 studies across medical schools worldwide found strong associations between higher EI, better academic performance, improved mental health, empathy, sleep quality, and reduced fatigue [3]. Another review across seven studies showed that in six, female students reported higher EI, and overall, EI was positively associated with educational outcomes, despite some evidence suggesting that EI decreases over the duration of medical schooling [4].

However, research in India has shown mixed results. A recent study in Mysuru even reported a negative link between EI and exam scores, suggesting that EI may act more like a protective factor against stress rather than a direct academic booster. Our findings fall somewhere in between: we see a positive trend, but the relationship is not strong enough to conclude that EI directly drives higher marks. This highlights how context, culture, and how EI is measured, all play an important role. Studies indicate that while overall emotional intelligence (EI) scores between males and females are often similar, notable differences exist across specific EI components [7,11].

In our study there was no statistical significance of EI between males and females although females have shown a greater academic performance compared to males. Females generally demonstrate higher abilities in interpersonal domains such as empathy, emotional awareness, and relationship management [8,12]. In contrast, males tend to perform better in intrapersonal areas like stress tolerance, emotional regulation, and self-confidence [7,10,11]. For example, female nursing and medical students scored significantly higher in empathy and showed stronger links between EI and problem-solving skills [8,12]. Male participants, particularly in clinical and executive roles, exhibited greater competence in managing stress and decision-making [7,10]. These gender-specific strengths are likely influenced by differences in socialization and resilience development [9,12].

When students were grouped by their academic results, a clearer pattern appeared. Those with distinction and first-class marks had significantly higher EI scores than those in lower categories. A large meta-analysis by MacCann et al. [7] found that EI significantly predicted academic performance, particularly when measured through ability-based approaches. Similarly, Sri Lankan research suggested that higher EI reduced procrastination and improved self-efficacy, indirectly enhancing GPA [9].

This suggests that EI might give students an edge by helping them manage stress, stay motivated, and remain focused during demanding study schedules. On the other hand, lower EI scores were more common in students who just passed or failed, underlining the role emotions can play in learning. A systematic review by Edussuriya et al. [8] highlighted how EI supports academic outcomes, stress management, empathy, and overall wellbeing. However, the relationship between EI and academic performance is not always consistent. A recent study from Mysuru reported a paradoxical negative correlation, suggesting that EI may act more as a protective factor against stress than as a direct driver of exam scores [12]. Other reviews also point to variability, with some showing that only certain EI subdomains (such as emotion regulation or empathy) correlate with academic results [10]. These differences may be due to the use of different EI measurement tools, varying sample characteristics, or contextual factors across different medical schools. Medical education is inherently stressful, and success depends on more than cognitive knowledge alone. Skills like self-awareness, emotional regulation, and empathy are increasingly recognized as vital for both academic success and professional development [7,8]. Research has also shown that higher EI is linked to better interpersonal communication, stress management, and resilience—qualities that extend beyond the classroom into clinical practice [1,3]. In this sense, EI not only contributes to better student performance but also prepares future doctors for patient-centered and emotionally demanding roles [7,8,9].

These findings remind us that being a successful medical student is not just about book knowledge. EI skills like self-awareness, empathy, and emotional regulation also plays a role. Medical training is stressful, and students who can manage their emotions are often better equipped to handle pressure, avoid burnout, and build stronger patient relationships later on. This means medical schools could benefit from actively nurturing EI through workshops, mentoring, and reflective learning, rather than focusing only on academics. This holistic approach has the potential to not only improve exam performance but also nurture empathetic, resilient, and adaptable physicians [1,7,8].

CONCLUSION

The present study showed that emotional intelligence may help students to perform well academically irrespective of gender and hence training on emotional intelligence may be considered during the medical course.

STRENGTHS AND LIMITATIONS OF THE STUDY

One strength of our study is that it used university exam scores, which are less biased since they involve both internal and external examiners. At the same time, we must note a few limitations. Since this was a cross-sectional study, we cannot say for certain whether EI directly causes better academic results. Also, EI was measured using a self-report tool, which can sometimes be affected by how students perceive themselves rather than their actual abilities. Finally, our study was limited to one medical college, so the findings may not apply to all settings.

REFERENCES

1. Filice L, Weese WJ. Developing Emotional Intelligence. Encyclopedia. 2024;4(1):583–599. doi:10.3390/encyclopedia4010037
2. MacCann C, Jiang Y, Brown LE, Double KS, Bucich M, Minbashian A. Emotional Intelligence Predicts Academic Performance: A Meta-Analysis. Psychol Bull. 2020;146(2):150–186. doi:10.1037/bul0000219
3. Edussuriya D, Perera S, Marambe K, Wijesiriwardena Y, Ekanayake K. The associates of emotional intelligence in medical students: A systematic review. TAPS. 2022;7(4):59–70. doi:10.29060/TAPS.2022-7-4/OA2714
4. Karkada IR, D'Souza U, Mustapha ZA. Relationship of emotional intelligence and academic performance among medical students: Systematic review. Univ J Educ Res. 2020;8(3A):72–79. doi:10.13189/ujer.2020.081410
5. Chew BH, Zain AM, Hassan F. Emotional intelligence and academic performance in first and final year medical students: a cross-sectional study. BMC Med Educ. 2013;13:44. doi:10.1186/1472-6920-13-44.

6. Bilimale AS, Hegde S, Pragadesh R, Rakesh M, Anil D, Gopi A. The relationship between emotional intelligence and academic performance among medical students in Mysuru. *Int J Acad Med*. 2024;10(2):62–66. doi:10.4103/ijam.ijam_76_23
7. Moryl A, Wójcik B, Woźniak-Prus M. Gender differences in emotional intelligence: a systematic review. *Front Psychol*. 2024;15:1345127. doi:10.3389/fpsyg.2024.1345127.
8. Lee H, Jung S. Gender differences in emotional intelligence: A cross-cultural meta-analysis. *Pers Individ Dif*. 2022;194:111646. doi:10.1016/j.paid.2022.111646
9. Zarzycka B, Szwamel K. Gender, socialisation, and emotional intelligence: A review of recent evidence. *Curr Psychol*. 2023;42:1883–1894. doi:10.1007/s12144-022-03046-7
10. Choudhury S, Kumar S, Prasad A. Gender-based differences in emotional intelligence among medical students. *J Educ Health Promot*. 2022;11:351. doi:10.4103/jehp.jehp_1917_21
11. Arora S, Ashrafian H, Davis R, Athanasiou T, Darzi A, Sevdalis N. Emotional intelligence in medicine: a systematic review through the context of the ACGME competencies. *Med Educ*. 2010;44(8):749–764. doi:10.1111/j.1365-2923.2010.03709.x
12. Mahmoud H, Abdelrahman A, Ali R. Emotional intelligence and gender differences among healthcare students: A cross-sectional study. *BMC Med Educ*. 2023; 23:601. doi:10.1186/s12909-023-04501-7
13. Schutte NS, Malouff JM, Hall LE, Haggerty DJ, Cooper JT, Golden CJ, Dornheim L. Development and validation of a measure of emotional intelligence. *Pers Individ Dif*. 1998;25(2):167–77. doi:10.1016/S0191-8869(98)00001-4