

Emotional Intelligence in Academic Decision-Making: A Systematic Review of Sentiment Mining Approaches

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Abstract

This study aims to investigate and understand the importance of the intersection of Emotional Intelligence and academic decision-making through a systematic review of sentiment mining approaches. Recognizing the pivotal role of emotions in shaping educational choices, this paper explores the theoretical foundations of emotional intelligence and the integration of sentiment-mining methodologies within academic contexts. In this study, an extensive literature review is conducted focusing on emotional intelligence within the education sector, as well as exploring sentiment mining approaches. In the existing literature review, the researchers have introduced various machine learning and lexicon-based techniques, significantly contributing to the advancement of emotional intelligence in the education sector for higher studies. The findings contribute to the role of emotional intelligence in shaping academic decisions, providing valuable insights for educational practitioners. This study shows a direct relationship between emotional intelligence and decision-making within the educational sector.

Keywords: Emotional Intelligence, Academic Decision Making, Sentiment Mining

I. Introduction

In the field of academia, the role of Emotional Intelligence (EI) in decision-making processes has emerged as a substantial area of research (**Radford, 2003**). Academic decision-making comprises of wide range of spectrum available for educators, administrators, and mainly for students in college/subject/stream selection. There are various factors such as the college's history, placement track record, quality of teachers, learning environment, infrastructure, academic and administrative processes within educational institutes etc. These factors play a significant role in the decision-making of selecting a college/subject/stream. Understanding the emotional aspects of students in their decision-making process is essential for creating a positive, supportive, and effective educational environment (**Litman & Forbes-Riley, 2004**).

The significance of EI in academic decision-making is directly proportionate to the student's personal and professional growth. In higher education, when students make choices that involve emotional attachment, it is observed that it gives better academic performance (**Grimalt-Álvaro & Usart, 2023**). In many ways, EI benefits students in their academic decision-making, by integrating emotional intelligence into decision-making processes, academic institutions can foster a more empathetic and inclusive culture, leading to enhanced student outcomes and enhanced faculty collaboration.

II. Background and Literature Review

In research paper published in *Imagination, Cognition and Personality*, (Salovey et al., 1990) introduced the framework for EI and emotion-related skills. The authors have explored the influence of skills related to emotion and the function of emotions in traditional conceptions of intelligence. This research work placed the foundation for the study of EI and the use of emotions & feelings in the decision-making process.

(Chauhan, 2016) her research article titled 'Role of Emotional Intelligence in Decision Making', has performed a concise review focusing on the role of emotional intelligence in academic decision-making. This study emphasizes EI as an innovative variable in the decision-making process. The researcher also incorporated a lot of mythological references such as the Bhagavad Gita, Krishna's leadership, and the teachings of Jesus Christ, to explain the significance of EI in decision-making.

(Meher et al., 2021) have analyzed the Emotional Intelligence and Academic Performance of a four-year integrated B.Ed. trainee. To perform this analysis, a six-point emotional intelligence scale was used. The research underscores that there is a significant positive correlation between EI and academic performance. Consequently, based on researchers' findings, it is recommended that everyone who is directly or indirectly involved, encourage students to achieve a higher level of emotional intelligence.

Concepts of Emotional Intelligence

(Goleman, 2020) in the book titled 'Emotional Intelligence' provides in-depth exploration of the concept by educators for social and emotional learning. This book has many frameworks for understanding emotional intelligence. Additionally, the author further explains in this book various aspects of emotional intelligence concepts for the student, professional, workers etc.

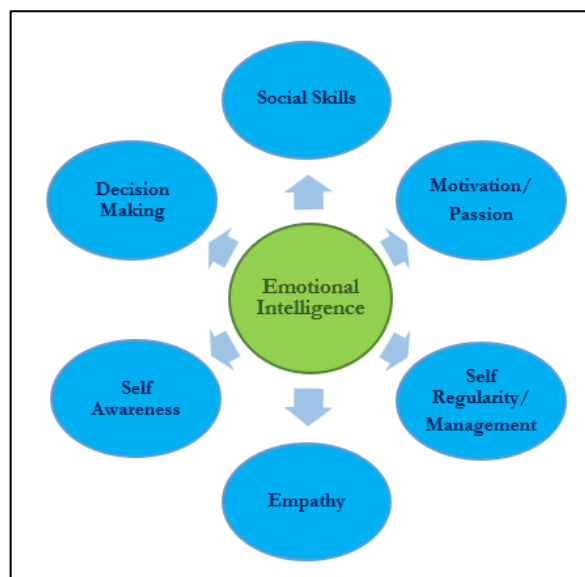


Figure 1: Components of Emotional Intelligence

III. Emotional Intelligence in Education

In the book section titled “The Role of Emotional Intelligence in Education” published by Springer in 2009. **(Parker et al., 2009)** explored the significance of EI in the Education Sector. The authors focus on its impact on academic achievement and adjustment across different educational levels such as elementary school, secondary education, medical education students, and various post-secondary programs. This post-comprehensive investigation aims to shed light on the diverse ways in which emotional intelligence contributes to the academic sector at different stages of learning and development.

(Nasir & Masrur, 2010) have conducted their research on EI relation to academic achievement, gender, and age. The utilization of the BarOn Emotional Quotient Inventory (EQi) as a measure of emotional intelligence revealed a predictive relationship with academic success. The research findings suggest that individuals with higher scores on the BarOn EQi, indicating stronger EI and likely to experience success in academic sector. This underscores the role of emotional intelligence as a significant factor in predicting positive outcomes in the academic domain. According to their findings, developing of emotional competencies in students may bring better educational outcomes in terms of improved academic performance, refinement of personality traits, and increased success in the workplace.

(Chamundeswari, 2013) in her paper titled “Emotional Intelligence and Academic Achievement among Students at the Higher Secondary Level” published in the International Journal of Academic Research in Economics and Management Sciences explored the relationship between emotional intelligence and academic achievement focusing on students at the higher secondary level. As per the findings, Emotional intelligence positively correlates with academic achievement among students. Furthermore, this research study highlights that students affiliated with Central Boards are shown higher levels of emotional intelligence, and better academic performance. These results underscore the importance of emotional intelligence in the academic context for future development and success.

Significance of Emotional Intelligence in Decision-Making

In research paper published in International Journal of Environmental Research and Public Health, **(Urquijo et al., 2019)** conducted comprehensive research study on emotional intelligence's role in career success. The primary objective of their investigation was to assess the role of emotional intelligence in shaping career success, beyond the influence of personality traits. The authors analyzed connection between emotional intelligence and career success, by using regression analysis to examine predictors of extrinsic career success. The analytical

approach allowed them to understand the relationship between emotional intelligence and various facets of career achievement.

(MacCann et al., 2020) have explored the association between student emotional intelligence (EI) and academic performance. The primary focus of the research article is the correlation between psychological characteristics and academic performance. The authors specifically addressed three prominent mixed models [*Emotional Competence* (Goleman, 1998), *Bar-On's Emotional and Social Competence* (Bar-On, 2006), *Petrides and Furnham's trait Emotional Intelligence* (Petrides, Perez-Gonzalez, & Furnham, 2007; Petrides, Pita, et al., 2007)] of Emotional Intelligence. The research findings highlight that emotional intelligence stands out as a top predictor of academic performance.

(Fida et al., 2021) their paper titled, “Role of Emotional Intelligence in Career Advancement of University Teachers” discusses emotional intelligence theories and their connection to career advancement in the higher education context. The authors extensively reviewed theories and components related to career advancement in higher education. As per their findings, a positive and significant relationship was found between emotional intelligence and career advancement. Furthermore, the authors explored the impact of emotional intelligence on the career progression of individuals in the academic setting.

IV. Overview of Sentiment Mining Approaches

In the previous decade, sentiment mining has found extensive application in various fields such as Social Media, Product Review, Online Courses and Education. (D’Andrea et al., 2015) in the paper titled “Approaches, Tools and Applications for Sentiment Analysis Implementation” provided an overview of sentiment mining approaches, tools, and applications. The author has explored the Classification of sentiment mining approaches and tools based on features. In this research article, board-level Sentiment classification approaches were explored.

Sentiment Mining is a computational technique that involves statistical methods, machine learning models and the use of natural language processing (Pooja & Bhalla, 2022). The primary objective of sentiment mining is to determine sentiment or emotions expressed in a piece of text/image/video etc. Sentiment mining can be achieved using machine learning and lexicon-based methods as mentioned in Table 1 below:

Table 1: Overview of Sentiment Mining Approaches

S. No.	Sentiment Mining Approaches	Method	Use Case
1	Machine learning	Support Vector Machines (SVM) Naive Bayes Decision Trees Neural Networks	Effective in handling complex patterns and context-specific sentiments.
2	Lexicon based	SentiWordNet Dictionary based approach VADER (Valence Aware Dictionary and sEntiment Reasoner) AFINN (Affective Norms for English Words)	Simple and interpretable, especially for languages with rich lexicons.
3	Hybrid	Combination of Machine Learning and Lexicon-Based Approaches	Combines the strengths of both approaches for improved accuracy and versatility.

Sentiment Mining in Academic Decision-Making

(Mohzan et al., 2013) in their research article titled “The Influence of Emotional Intelligence on Academic Achievement”, have performed the statistical analysis on the survey data obtained from the bachelor degree student (Total No. of population, 1214). The experiment was performed to examine the relationship between emotional intelligence and academic achievement using Pearson correlation analysis. As per the findings of the research, it was concluded that students with strong emotional intelligence and having control over their feelings are effectively managing pressure for academic excellence in higher education. Research also revealed that student who was offered emotional intelligence as part of their curriculum, have a greater correlation between Emotional Intelligence and Academic Achievement. The authors performed a comprehensive correlation study on survey data.

(Shaik et al., 2023) in their research article titled “Sentiment Analysis and Opinion Mining on Educational Data: A Survey”, suggested improvement of educational processes through adoption of sentiment analysis. Overview of sentiment annotation techniques and AI's role in sentiment analysis. Exploration of trends and challenges in sentiment analysis for education. This research article provides an overview of sentiment annotation techniques and explores the role of Artificial Intelligence in sentiment analysis. Additionally, the authors explained the prevailing trends and challenges associated with sentiment mining in the educational domain.

V. Conclusion

This research paper has undertaken a comprehensive exploration of EI in academic decision-making, utilizing a systematic review of sentiment mining approaches. The synthesis of existing literature has illuminated the pivotal role emotions play in shaping educational experiences, emphasizing the implicit need for understanding student sentiments. Through an exploration of EI theory and sentiment mining methodologies, the study has provided a robust foundation for investigating the interplay between emotions and academic performance. As educational landscapes evolve, acknowledging the emotional dimensions of student experiences becomes imperative. This research contributes to the ongoing dialogue by showing light on the potential of sentiment mining approaches to enhance academic decision-making. The paper concludes by supporting continued research in this interdisciplinary domain. It also emphasizes the effective handling of emotional intelligence management in shaping the future of education.

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