Students' emotional intelligence and academic stress in 21st century learning

Iskandar[1*], Rasidin[1]

[1]Islamic State University Sulthan Thaha Saifuddin Jambi, Indonesia
e-mail: iskandar@uinjambi.ac.id
*Corresponding Author.

Abstract: Academic stress is a common trend in problems faced by students in the 21st-century learning era. This trend comes from the high demands and pressures in achieving academic achievement, thus providing vulnerability to excessive emotional burdens on students. Therefore, managing emotional intelligence is important in overcoming academic stress conditions. This study aims to analyze and synthesize 10 research articles that discuss students' emotional intelligence and academic stress. This study uses a quantitative meta-analysis approach. The study's results revealed that emotional intelligence has a positive relationship with controlling students' academic stress. These results indicate that the higher the mastery of emotional intelligence, the better the academic stress management. This study provides essential facts about managing students' emotional intelligence. Further research can be directed at quantitatively testing the sustainable impact of managing emotional intelligence on students more broadly with the diversity of student conditions.
Keywords: Emotional Intelligence, Academic Stress, 21st Century Learning, Student.

Introduction

In the 21st century, the world is facing rapid changes due to technological disruption affecting various aspects of life, including education. Students are imagined to be under increasingly complex academic pressures, such as stress due to the use of technology, exam burdens, difficulty understanding lecture materials, and the many assignments given by lecturers. This pressure often triggers psychological and physical problems, such as depression, anxiety, and academic failure (Manimozhi & Srinivasan, 2018). Student academic stress is a condition of psychological or biological tension due to excessive academic demands. This condition arises from the pressure of following the educational process at university, which can cause emotional integrity. In the highly dynamic 21st-century learning environment, students must have high emotional intelligence to manage stress and maintain psychological balance.

The theory of emotional intelligence (EI) states that the ability to understand and manage one's own and others' emotions contributes significantly to individual success, both in education and career. Previous research has shown that individuals with high emotional intelligence can better control stress and respond to stressful situations constructively (Miri et al., 2013). This indicates that emotional intelligence is important in dealing with stress and is key to achieving academic success. From a psychological perspective, stress is a mental imbalance triggered by external pressure. In contrast, biologically, stress is a physiological reaction to stimuli that exceed the limits of an individual's ability to cope (Fink, 2009). In the era of digital disruption, students are required to respond quickly to changes, especially in information technology, which is an integral part of the learning process (Osman & Marimuthu, 2010, Setiawan & Anggraeni, 2019). However, low competence in the use of technology often weakens natural academic pressure (Lestari, 2015).

According to Goleman (2000), facing the challenges of the 21st century requires the ability to control oneself, manage emotions, and communicate effectively. Emotional intelligence is essential in supporting students' mental and social well-being, helping them understand the academic environment, and making the right decisions in stressful situations. Unmanaged emotions can interfere with productivity, while good emotional management can increase satisfaction, responsibility, and the ability to collaborate. Preparing to face the challenges of 21st-century learning also requires the integration of emotional intelligence with digital skills. This helps students manage emotions and encourages them to think critically, analytically, and creatively in solving problems and communicating effectively.

This study examines the relationship between emotional intelligence and students' academic stress in 21st-century learning. Through synthesising relevant research results, it is hoped that a more profound understanding can be obtained of how emotional intelligence can help students manage complex academic pressures while utilising technology as a learning support tool. The introduction section must contain (in sequence) a general background, a previous literature study (state-of-the-art) as a basis for the statement of scientific novelty of the article, a statement of scientific novelty of science, and a research problem or hypothesis. At the end of the introduction, the purpose of the article should be clearly written. In the scientific article format, it is not permissible to review the literature as in the research report, but it is manifested in the form of a previous study review (state-of-the-art) to demonstrate the scientific novelty of the article.

Method

This study uses a meta-analysis approach, which combines and broadcasts the results of various published studies. Meta-analysis aims to obtain more decisive conclusions regarding the relationship between emotional intelligence and academic stress in students. The data collection process begins by searching for relevant journals through several scientific databases, such as Science Direct, ProQuest, Springer Link, and Google Scholar. The keywords used in the search include "emotional intelligence" and "student academic stress". This search was carried out with the following criteria:

1. The relationship journal discusses the correlation between emotional intelligence and academic stress.
2. The article includes complete information regarding the number of samples (n).
3. The publication was carried out in the period 2018–2022.
4. From the search results, 10 journals were obtained that met the criteria. These journals were then used as the main material in the analysis. The research was analyzed quantitatively with the help of the Meta-mar platform, a brave service designed to assist the meta-analysis process.

After the journals were collected, the following steps were taken:

a. Data Extraction

Relevant data, such as sample size, correlation coefficients, and research variables, were extracted from each journal. This information was then organized in a systematic format to facilitate analysis.

b. Data Analysis

The extracted data were statistically analyzed to see the strength of the relationship between emotional intelligence and academic stress. This analysis involves calculating the average effect of the collected research results.

c. Synthesis of Findings

All results were critically explained and compared to find common patterns or trends. The data were then synthesized to provide a comprehensive picture of the relationship between the variables studied.

Results and Discussion

Based on the review of journals related to Emotional Intelligence and Academic Stress in College Students, 10 journals were identified that met the research criteria. Collectively, these journals involved a total of 5,110 respondents. The studies in this study came from various countries, including the United States, Spain, India, Malaysia, the Philippines, and Indonesia. The sample sizes in these studies varied significantly, ranging from 30 to 790 participants. This variation reflects the diversity in the populations studied, both in size and cultural or academic context. The journals provide comprehensive insights into the relationship between emotional intelligence and academic stress by combining perspectives from various educational systems in the countries studied. This diverse data set serves as a strong foundation for further analysis and to draw comprehensive conclusions about the role of emotional intelligence in managing academic stress among college students.

Table 1. Summary of Previous Research Journals related to emotional intelligence and academic stress in students

Year	Researcher, Year, Country	Research Title	Sample Size	Correlation	Emotional Intelligence Measurement Tool	Performance Measurement Tool
2022	Mary Braimah , Eleanor Bosompema a Takyi , Ama Boatemah Sarpong , Dogbey Alice Emmanuella & Samuel Kwabla Segbefia	Academic stress and emotional intelligence among undergraduate students in selected universities in Ghana	460	0.207	The Assessing Emotional Scale (AES)	The Perceived Stress Scale (PSS)
2021	Sona Roy1 , Sneha Thomas2 , Dr. Molly Joy3	Emotional Intelligence and Academic Stress among Undergraduate Students	119	0.365	evaluate Emotional Intelligence Shutte's Emotional Intelligence test (SSREIT)	measure the academic stress of students (Lin & Chen, 2009)
2019	Nur Khairunisa Abu Talip, Cyndra Robert Budull, Hasmiza Abdul Majeed, Theresa Ahing, Noreriani Sabturani &	Emotional Intelligence and Perception of Stress among Undergraduate University Students	460	0.207	the Assessing Emotional Scale (AES)	the Perceived Stress Scale (PSS)

Year	Researcher, Year, Country	Research Title	Sample Size	Correlation	Emotional Intelligence Measurement Tool	Performance Measurement Tool
2021	Muhamad Syukrie Abu Talip Inmaculada García-Martínez 1 , Eufrasio Pérez-Navío 2 , Miguel Pérez-Ferra 2,* and Rocío Quijano-López 3,*	Relationship between Emotional Intelligence, Educational Achievement and Academic Stress of Pre-Service Teachers	1010	0.900	Self-Emotion Appraisal (SEA), Others' Emotion Appraisal (OEA), Use of Emotion (UOE), and Regulation of Emotion (ROE)	d the SISCO Inventory of academic stress
2019	Chad Stevens, Keystone College, USA Elizabeth Schneider, Keystone College, USA Patricia Bederman-Miller, Keystone College, USA Karen Arcangelo, Keystone College, USA	Exploring The Relationship Between Emotional Intelligence And Academic Stress Among Students At A Small, Private College	134	-.448	Student total-trait emotional intelligence (TTEI)	university stress scores were significantly correlated. Measures of TTEI and USS
2019	Sari Julika1 & Diana Setiyawati2	Kecerdasan Emosional, Stres Akademik, dan Kesejahteraan Subjektif pada Mahasiswa	132	0.368	TPPE (Tes Pemahaman dan Pengelolaan Emosi) versi STEU-B (Allen, Weissman, MacCann, Helwig, & Robert, 2014)	n Skala Stres Akademik milik Nugraheni (2012)
2021 (India)	Naman Jassal, BA*	Relationship between Academic Stress and Emotional Intelligence in	50	0.668	Emotional intelligence test (EIT)	Student Academic Stress Scale (SASS) by Busari et al

Year	Researcher, Year, Country	Research Title	Sample Size	Correlation	Emotional Intelligence Measurement Tool	Performance Measurement Tool
2019	Chad Stevens, Keystone College, USA Elizabeth Schneider, Keystone College, USA Patricia Bederman-Miller, Keystone College, USA Karen Arcangelo, Keystone College, USA	High School Students Exploring The Relationship Between Emotional Intelligence And Academic Stress Among Students At A Small, Private College	134	-.134	Student total-trait emotional intelligence (TTEI)	university stress scores were significantly correlated. Measures of TTEI and USS
2021	Sona Roy1 , Sneha Thomas2 , Dr. Molly Joy	Emotional Intelligence and Academic Stress among Undergraduate Students	119	0,365	To evaluate Emotional Intelligence Shutte's Emotional Intelligence test (SSREIT	to evaluate the academic stress Academic Stress inventory by Lin &Chen (1997)
2020 Pakistan	Shazia Jamil1 , Sohail Jamil2 , Muhammad Saif Ullah3	Correlation between emotional intelligence and academic stress in undergraduate medical students	210	-0.285	Schutte's emotional intelligence scale has 33-items on five points Likert scale	The perceived stress scale by Sheldon Cohen
2015-Karala	Dr. Rosa. M.C. Preethi C	Influence of Emotional Intelligence and Academic Stress of Student Teachers in Calicut District	200	-.048	Emotional Intelligence scale	Academic stress scale

Based on Table 1 in the study, it is known that there are 10 previous studies related to the relationship between emotional intelligence and academic stress in students from various countries. Based on a meta-analysis of the data obtained, multiple results were found regarding the strength of the relationship between the two variables, as summarized below:

1. Positive Relationship

    Most studies show that emotional intelligence positively correlates with students' ability to cope with academic stress. Research by Mary Braimah et al. (2022) in Ghana and Sona Roy et al. (2021) in India found a positive correlation of 0.207 and 0.365. A similar thing was found in a study by Sari Julika & Diana Setiyawati (2019) in Indonesia, with a correlation of 0.368, which emphasized that students with higher emotional intelligence tend to be better able to manage academic stress.

2. Strong Significant Relationship

    Research by Inmaculada García-Martínez et al. (2021) showed a powerful correlation of 0.900. These results confirm that emotional intelligence plays an important role in managing academic stress while improving academic achievement in student teachers.

3. Negative Relationship

    Several studies, such as those conducted by Chad Stevens et al. (2019) and Shazia Jamil et al. (2020), found negative correlations of -0.134 and -0.285. This suggests that in certain groups, higher levels of emotional intelligence are not always accompanied by decreased academic stress, which may be due to environmental or cultural factors.

4. Weak or Insignificant Relationship

    Research by Dr Rosa M.C. Preethi C (2015) showed a very weak relationship with a correlation of -0.048, indicating that emotional intelligence does not significantly impact academic stress in the context of her research.

    From Table 1, various instruments can be identified to measure emotional intelligence and academic stress:

    a. Emotional Intelligence: Various measuring instruments are used, such as The Assessing Emotional Scale (AES), Schutte's Emotional Intelligence Scale (SSREIT), and the Understanding and Management of Emotions Test (TPPE).

    b. Academic Stress: Instruments used include The Perceived Stress Scale (PSS), Student Academic Stress Scale (SASS), and SISCO Inventory of Academic Stress.

However, it should be considered that several other factors can affect performance besides emotional intelligence. All data that has been collected is processed using Meta-mar (Free Online Meta-Analysis Service). The data processing results are a collection of correlation coefficients analyzed using a random effect size model with a 95% confidence interval and an inconsistency value (I^2). Effect sizes are categorized as follows:

    a. Small Effect Size: g value <0.2,

    b. Medium Effect Size: g value ranges from 0.2 to 0.8,

    c. Large Effect Size: g value > 0.8.

The results of the meta-analysis showed that the inconsistency value (I^2) was 96.1%, which is included in the high category ($I^2 \geq 75\%$) according to Higgins et al. (2003). Thus, the heterogeneity in this study is quite significant. Therefore, the analysis used the Fisher Z value in the random effect model. The selection of the random effect model is also based on the variation of measuring instruments and subject characteristics from the studies analyzed, which can affect the results. In Table 1, it can be seen that emotional intelligence has a correlation coefficient of 0.47 (medium effect size) in the random effect model (95% CI = 0.331 - 0.541), with an inconsistency value (I^2) of 96.1%. These results indicate that good emotional intelligence positively affects the ability to manage academic stress, which in turn can support increased learning achievement.

The results of this study indicate that emotional intelligence significantly influences students' ability to manage academic stress. Based on the meta-analysis, emotional intelligence contributes 47% to students' academic stress, as indicated by the coefficient of determination $R2 = 0.47$ R 2 = 0.47. This means that almost half of the student's academic stress can be explained by their level of emotional intelligence. In contrast, other factors, such as academic demands, social conditions, environment, and other psychological aspects, influence the other 53%.

Academic stress in students often arises because of their inability to adapt to various high academic demands. This condition triggers discomfort that affects multiple physical, cognitive, emotional, and behavioural aspects. It can cause disorders in the body, such as fatigue, which hinders students from carrying out daily activities. Cognitively, stress can interfere with the ability to think logically and rationally, so students have difficulty completing assignments or dealing with complex academic situations. From an emotional perspective, stress can trigger excessive anxiety, frustration, and even depression. Meanwhile, behaviorally, prolonged stress can cause a loss of motivation to learn, academic failure, and, in more serious cases, can cause students to drop out of college. Students with good emotional intelligence are better able to manage the impact of this stress. Emotional intelligence gives them the ability to recognize, understand, and manage their own emotions, as well as understand the feelings of others. This helps them stay calm under pressure, maintain psychological balance, and motivate themselves to face academic challenges.

In addition, observations and interviews show that emotional intelligence is critical in supporting learning in the digital era. Students are currently faced with the challenges of technology-based learning, such as using computers or smartphones for online learning activities. The stress that arises from the demands to adapt to this technology can be better managed if students have adequate emotional intelligence skills. Managing time, completing tasks, and adapting to technology are essential keys to facing this challenge. Emotional intelligence also plays a role in creating a more relevant and effective learning environment. Students must increase their awareness of emotions and understand how emotions influence behaviour. In addition, understanding the feelings of others, such as colleagues or lecturers, helps create more positive interactions. The learning process can be combined between conventional classroom learning and interactive online learning to provide a learning experience that suits students' needs. By understanding students' psychological and physical characteristics, learning design can be adjusted to manage stress better.

Finally, emotional intelligence is important in helping students deal with academic pressure. Stress management improves the quality of learning and helps students adapt to the demands of technology in the modern era. Therefore, the development of emotional intelligence must be an integral part of the educational approach that creates resilient, productive individuals ready to face various challenges in the 21st-century learning era.

Conclusion

This study shows that emotional intelligence is important in managing students' academic stress, especially in 21st-century learning. The meta-analysis indicates that emotional intelligence contributes 47% to students' ability to manage academic stress. Thus, emotional intelligence is a key factor that supports students in dealing with academic stress. However, 53% of academic stress is still influenced by other factors, such as social environment, learning style, and individual psychological conditions. Emotional intelligence helps students recognise, understand, and manage their own emotions and understand the feelings of others so that they can maintain emotional balance even in stressful situations. It also helps students improve their ability to adapt to technology-based learning, an important element in 21st-century learning. Students with good emotional intelligence tend to have better abilities in dealing with various dimensions of stress, both physical, cognitive, affective, and behavioural. They can better maintain learning motivation, concentration, and psychological balance to minimise risks such as

fatigue, excessive anxiety, and dropping out of college. In addition, this study also emphasises the importance of integrating emotional intelligence into the learning process. In the digital era, mastery of emotional intelligence is relevant to help students manage stress. This supports their success in utilising learning technology, such as online platforms, computers, or smartphones, to support interaction and mastery of the material. Therefore, educational institutions and educators must develop students' emotional intelligence through relevant learning strategies, such as technology-based learning integrated with a psychological approach.

This study provides a strong foundation that emotional intelligence is an essential element that needs to be considered in higher education, especially in facing the challenges of 21st-century learning. To complement these findings, further research is needed to identify other factors that influence academic stress, such as the role of the social environment, learning styles, teaching patterns, and psychological support. In addition, further research can explore the effectiveness of various emotional intelligence-based intervention programs that help students manage academic stress and their impact on long-term academic success. Thus, the development of emotional intelligence can be optimised and adjusted to the ever-evolving needs of education.

References

Assareh, A., & Hosseini Bidokht, M. (2011). Barriers to E-teaching and E-learning. *Procedia Computer Science*, 3, 791–795. https://doi.org/10.1016/j.procs.2010.12.129

Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* (Third Edit, Vol. 8). SAGE Publication. https://doi.org/10.1163/22118993-90000268

Danciu, E. L. (2010). Methods of developing children's emotional intelligence. *Procedia - Social and Behavioral Sciences*, 5, 2227–2233. https://doi.org/10.1016/j.sbspro.2010.07.440

Danciu, E. L. (2010). Methods of developing children's emotional intelligence. *Procedia - Social and Behavioral Sciences*, 5, 2227–2233. https://doi.org/10.1016/j.sbspro.2010.07.440

Dolev, N. (2016) Teachers' emotional intelligence: The impact of training. https://www.researchgate.net/publication/307167579_Teachers%27_emotional_intelligence_The_impact_of_training

Doppelt, Y. (2003). Implementation and assessment of project-based learning in a flexible environment. *International Journal of Technology and Design Education*, 13(3), 255–272. https://doi.org/10.1023/A:1026125427344

Goleman, D. Emotional competence: *Senior executives need a healthy dose of EC*. Executive Excellence (1999).

Goleman, D. *Emotional intelligence: Issues in paradigm building*. The emotionally intelligent workplace (2001).

Goleman, D. (2003). *Working with Emotional Intelligence* (Terjemahan Alex Kantjono W). Jakarta: PT Gramedia Pustaka Utama.

Goleman, D. (2004). *Emotional Intelligence Kecerdasan Emosional mengapa EI lebih penting daripada IQ.* Jakarta: PT Gramedia Pustaka Utama.

Gümüş, S., & Okur, M. R. (2010). Using multimedia objects in online learning environment. Procedia - Social and Behavioral Sciences, 2(2), 5157–5161. https://doi.org/10.1016/j.sbspro.2010.03.838

Hardianto, D. (2008). Pemanfaatan Software Komputer untuk Meningkatkan Kecerdasan Emosi (EQ) Anak. *Majalah Ilmiah Pembelajaran*, 4, 2008.

Iskandar, (2009) *Psikologi Pendidikan*. Jakarta: Gaung PersasdaPress

Iskandar, Rohaty Mohd. Majzub, & Zuria Mahmud. (2009). Kecerdasan Emosi dan Komitmen Pekerjaan dalam Kalangan Pensyarah Universiti di Indonesia. *Jurnal Pendidikan Malaysia*, 34(1), 173–186.

Iskandar, (2013) *Metodologi Penelitian Pendidikan dan Sosial*. Jakarta: Referensi.

Iskandar. (2016). *Elearning Model Implementation to Improve the Learning Quality in Iain Sulthan Thaha Saifuddin Jambi* : (Case Study on eLearning Model of Guidance and Counseling Subject English Study Program 3rd Semester). *International Journal of Science and Research (IJSR)*, 5(12), 1013–1017. https://doi.org/10.21275/ART20163512

Iskandar, Sastradika, D., & Defrianti, D. (2019). Optimizing Inquiry-based Learning Activity in Improving Students' Scientific Literacy Skills. *Journal of Physics: Conference Series*, 1233(1). https://doi.org/10.1088/1742-6596/1233/1/012061

Iskandar, dkk. (2021) Metode Penelitian Campuran "Konsep Prosedur dan Contoh". Jawa Tengah: PT NEM.

Kadini, (2014) *Pentingnya Kecerdadan Emosi dalam Pembelajaran*. http://e-journal.unipma.ac.id/index.php/equilibrium/article/view/601

Mukhtar & Iskandar, (2010) Desain Pembelajaran berbais TIK. Jakarta: Gaung PersdaPress.

Lestari, S. (2015). Analisis Kemampuan Technological Pedagogical Content Knowledge (TPACK) pada Guru Biologi SMA dalam Materi Sistem Saraf. *Seminar Nasional XII Pendidikan Biologi* FKIP UNS 2015, 1(1), 123–136.

Mangkunegara, A. A. A. P., & Puspitasari, M. (2015). Kecerdasan Emosi, Stress Kerja, dan Kinerja Guru SMA. *Jurnal Kependidikan*, 45(2), 142–155. https://doi.org/https://doi.org/10.21831/jk.v45i2.7491

Martina, M., Denisa, M., & Mariana, S. (2015). Emotional Intelligence of Manageres. *Procedia Economics and Finance*, 26(15), 1119–1123. https://doi.org/10.1016/s2212-5671(15)00939-9

Mustapha, R., Ariffin, S. R., Najmuddin, S., & Hassan, S. (2003). Kecerdasan emosi dan hubungannya dengan nilai kerja. *Jurnal Teknologi*, 39(1995), 77–84.

Mustafa, M. Z., Ismail, F. N., & Buntat, Y. (2014). Emotional Intelligence and Organizational Commitment among Polytechnic Lecturers : A Case Study On Malaysia Northern Zone Polytechnic. *Journal of Education and Practice*, 5(20), 13–22.

Osman, K., & Marimuthu, N. (2010). Setting new learning targets for the 21st century science education in Malaysia. *Procedia - Social and Behavioral Sciences*, 2(2), 3737–3741. https://doi.org/10.1016/j.sbspro.2010.03.581

Özer, E., Hamarta, E., & Deniz, M. E. (2016). *Emotional Intelligence, Core-Self Evaluation, and Life Satisfaction. Psychology*, 07(02), 145–153. https://doi.org/10.4236/psych.2016.72017

sari, W., Qomariah, N., & Setyowati, T. (2020). The Role of Emotional Intelligence, Spiritual Intelligence And Work Motivation In Improving The Performance of Hotel Employees. *International Journal of Economics and Management Studies*, 7(6), 112–118. https://doi.org/10.14445/23939125/ijems-v7i6p116

Setiawan, M. E., Anggraeni, I,. O. Giving Questions and Getting Answers (GQGA) Strategy Improves Biology Learning Outcomes. *Scientiae Educatia: Jurnal Pendidikan Sains*, 8 (2) : 154-165. http://dx.doi.org/10.24235/sc.educatia.v8i2.4937.

Syafrimen, Ishak, N. M., & Erlina, N. (2017). *Emotional intelligence profile of prospective teachers. Journal of Engineering and Applied Sciences*, 12(7), 1677–1680. https://doi.org/https://doi.org/10.3923/jeasci.2017.1677.1680

Wang, C. J. (2019). Facilitating the emotional intelligence development of students: Use of technological pedagogical content knowledge (TPACK). *Journal of Hospitality, Leisure, Sport and Tourism Education*, May, 100198. https://doi.org/10.1016/j.jhlste.2019.100198