



Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

Musfirah¹, Imron Burhan^{2*}, Hardiyanti Hatibu³, M. Yunasri Ridhoh⁴, Andika Marsuki⁵

Universitas Negeri Makassar, Indonesia¹

Universitas Negeri Makassar, Indonesia²

Universitas Negeri Makassar, Indonesia³

Universitas Negeri Makassar, Indonesia⁴

Universitas Negeri Makassar, Indonesia⁵

Corresponding Email: imron.burhan@unm.ac.id*

Received: 01-06-2025

Reviewed: 01-07-2025

Accepted: 15-08-2025

Abstract

This article discusses the impact of mental health and academic stress on students' academic performance through a literature review. The objective of this study is to identify how mental well-being and stress levels affect learning effectiveness and academic achievement. The method employed is a literature analysis of various studies that explore the relationship between mental health, academic stress, and learning outcomes. The findings indicate that stable mental health contributes positively to increased focus, motivation, and comprehension of learning materials. Conversely, unmanaged stress can impair concentration, reduce interest in learning, and negatively affect academic results. However, in certain cases, academic stress (when experienced at optimal levels, or eustress) can serve as a motivating factor that enhances academic performance. Factors such as the learning environment, social support, and teaching methods also play a role in moderating the impact of mental conditions on student achievement. Therefore, it is essential for educational institutions to provide mental health intervention programs, counseling services, and adaptive learning approaches to help students manage stress and improve their academic performance.

Keywords: Mental Health; Stress; Academic Performance among Students

Introduction

Mental health plays a crucial role in supporting students' academic success. Show that students with healthy mental conditions tend to be more motivated, have clear goals, and enjoy the learning process (Lestari & Rista, 2023). In contrast, mental health disorders can negatively affect students' interest in learning, reduce motivation, and hinder their ability to recall information and solve problems. This aligns with Aditia et al. (2024), who state that mental

Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

health influences how students understand and cope with life's pressures in various situations, ultimately impacting their success in various aspects of life.

One of the main indicators of academic success is academic achievement. According to Lutiya et al. (2014), academic achievement refers to an individual's understanding of learning materials, typically expressed in numerical form and recorded in academic reports or grades. This achievement is influenced by various factors, both internal and external. Internal factors include physical condition, intellectual capacity, and prior academic experience, while external factors include social environment, family support, school policies, and the development of science and technology. Kristanto (2017) also emphasizes that academic achievement encompasses cognitive, affective, and psychomotor aspects, which develop through a systematic learning process.

One key factor that can affect both mental health and academic achievement is academic stress. Julika & Setiyawati (2019) suggest that academic stress often arises from students' difficulties in adapting to the demands of their lessons. In addition, non-academic factors such as social pressure, separation from family, and economic conditions contribute to the increasing levels of stress experienced by students. If not properly managed, academic stress can diminish mental well-being and hinder academic achievement.

Based on these findings, this study aims to examine the relationship between mental health and academic achievement, as well as explore the impact of academic stress on students' academic performance. Good mental health can enhance motivation and concentration, while mental disorders can potentially hinder understanding and academic performance. On the other hand, poorly managed academic stress can have detrimental effects on students' emotional well-being, which in turn impacts their academic success. Therefore, this study focuses on understanding the extent to which mental health and academic stress contribute to students' learning outcomes, as well as the implications for improving the effectiveness of teaching in schools.

Research Method

The method used in this study is a systematic literature review aimed at analyzing the impact of mental health and stress on students' academic performance, based on various scholarly sources such as journals, books, and academic articles (Ilma & Usodo, 2024). The object of this research comprises previous studies discussing mental health, academic stress, and student academic achievement, which were gathered through a search on Google Scholar within the publication range of 2015–2024. The search was conducted using keywords such as “the impact of mental health and stress on student academic performance,” resulting in the selection of 10–15 journals that met the inclusion criteria: (1) a primary focus on the relationship between mental health, academic stress, and academic achievement, (2) clearly stated research methods (quantitative, qualitative, or mixed methods), (3) publication in indexed and credible journals, and (4) written in either Indonesian or English. The review technique involved several stages: identifying the main research variables, collecting and

selecting relevant and credible references, analyzing and comparing variables across different studies based on underlying theories, chronology, and their respective impacts, conducting an in-depth review of the selected journals, formulating theoretical foundations derived from the literature analysis, and citing all reviewed sources to ensure originality and prevent plagiarism.

Result

After conducting a comprehensive literature review of 15 studies examining the relationship between mental health, stress, and student academic achievement, the author successfully gathered significant findings on how these psychological factors impact student learning outcomes. The studies, published between 2020 and 2025, offer valuable insights into the various ways mental health factors and stress affect academic performance. These studies cover a wide range of educational contexts, from elementary to high school levels, in different countries, providing a rich dataset for understanding the impact of mental health on academic success. The findings presented in these studies highlight several key themes, including the direct relationship between mental health stability and improved academic performance, the negative impact of chronic stress on student motivation and cognitive function, and the role of supportive environments both at school and at home in mitigating the adverse effects of mental health issues. The studies also emphasize the importance of integrated mental health support systems within educational institutions to create an optimal learning environment. Below are the key findings gathered from the existing literature:

Table 1. Literature Source Analysis

No.	Source	Research Findings
1.	Title: The Influence of Mental Health on the Learning Effectiveness of 8th Grade Students in Social Studies at SMP Negeri 20 Bekasi Authors: Lestari & Rista, 2023 Year: 2023 Journal: Research and Development Journal of Education, Vol. 9, No. 2, October 2023, Pages 881-888	Good mental health improves students' learning effectiveness. Schools need to provide interventions such as counseling, teacher training, and curricula that support mental health.
2.	Title: The Influence of Motivation, Stress, and Islamic Learning Environment on Academic Achievement with Islamic Learning Environment as an Intervening Variable Author: Ismartaya Year: 2021 Journal: Jurnal Tabarru': Islamic Banking and Finance, Volume 4, Number 1, May 2021, Pages 46-55	High motivation enhances academic achievement and helps students manage academic stress. An Islamic learning environment plays a role in reducing the negative impact of stress.
3.	Title: The Influence of Mental Health on Learning Effectiveness at SMAN 2 Koto Baru Dharmasraya Authors: Hawla et al. Year: 2022 Journal: Jurnal Pendidikan Tambusai, Volume 6, Number 2, Pages 8574-8581	Mental health affects learning effectiveness. Mental disorders reduce motivation, while family, school, and psychosocial support help maintain students' stability.

Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

No.	Source	Research Findings
4.	Title: Emotional Intelligence, Academic Stress, and Subjective Well-Being in University Students Authors: Julika & Setiyawati Year: 2019 Journal: Gadjah Mada Journal of Psychology (GAMAJOP), Volume 5, Number 1, Pages 50-59	Academic stress reduces students' well-being, while emotional intelligence helps manage it. Educational institutions need to provide mental health support and emotional intelligence training.
5.	Title: The Relationship Between Mental Health and Learning Achievement in Stunted Adolescents Authors: Lutiya et al. Year: 2024 Journal: Mahesa: Malahayati Health Student Journal, Volume 4, Number 9, Pages 4187-4193	Good mental health improves academic achievement in stunted adolescents. School, family, and healthcare support are necessary to maintain students' mental well-being.
6.	Title: The Influence of Mental Health on Learning Outcomes in Islamic Education at SMK Negeri 1 Bukittinggi Authors: Lara Setiawati et al. Year: 2023 Journal: Tabsyir: Jurnal Dakwah dan Sosial Humaniora, Vol. 4, No. 4, October 2023, Pages 01-18	Good mental health improves learning outcomes. Support from school, family, and healthcare services is needed to maintain students' mental health.
7.	Title: The Impact of Learning Fatigue on Students' Academic Achievement in Mathematics Learning Author: Kristanto Year: 2017 Journal: Widya Warta, No. 02, Year XLI, July 2017 ISSN: 0854-1981	Learning fatigue does not always reduce students' academic achievement. A variety of teaching methods should be implemented to reduce fatigue.
8.	Title: Mental Health and Academic Achievement in Primary School Students Authors: Kibtiyah et al. Year: 2023 Journal: Al-Adawat: Jurnal Pendidikan Madrasah Ibtidaiyah, Volume 02, No. 01, February 2023, Pages 12-22 e-ISSN: 2828-4496	Mental health has a low influence on academic achievement, while educational environment factors, teaching systems, and family support play a more dominant role. Further research is needed.
9.	Title: The Importance of Mental Health Education in Primary School: Perspectives of Teachers and Students Authors: Aditia et al. Year: 2024 Journal: IJEDR: Indonesian Journal of Education and Development Research, Vol. 2, No. 2, July 2024 E-ISSN: 3025-2393, P-ISSN: 3025-2385	Mental health education should be included in primary school curricula, with teacher training, a supportive environment, and parental and community involvement being important for the success of this program.
10.	Title: A Literature Review: The Impact of Bullying on Student Motivation Authors: Akbar et al. Year: 2023 Journal: Jurnal Ilmiah Profesi Pendidikan, Vol. 9, No. 1, Pages 76–81	Bullying can reduce students' motivation, although some students are motivated to prove themselves. Preventive actions such as teacher monitoring and parental involvement are essential to minimize its negative impact.
11.	Title: The Influence of Mental Health, Study Habits, and Achievement Motivation on Academic	Achievement motivation has a significant impact on academic

No.	Source	Research Findings
	Achievement at MTSN 4 Surabaya Authors: Eting Ida Fitriyah, Eli Masnawati, Didit Darmawan Year: 2024 Journal: Jurnal Kependidikan, Vol. 12, No. 2, Pages 307-320	success. Raising awareness about mental health, effective learning strategies, counseling services, and support from teachers and parents are important for student success.
12.	Title: The Impact of Academic Stress and Cognitive Load on Students' Learning Motivation Authors: Puspitasari & Affandi Year: 2024 Journal: Jurnal Psikologi, Vol. 11, No. 2, Pages 374-388	Academic stress and cognitive load reduce students' learning motivation. Schools need to manage both with flexible teaching strategies, while parents should provide emotional support.
13.	Title: The Relationship Between Mental Health and Academic Achievement in SMPN 36 Surabaya During Online Learning in the Pandemic Authors: Year: 2023 Journal: Web Of Scientist: International Scientific Research Journal, Vol. 2, No. 3, Pages 1-8	Mental health affects students' academic achievement, although the influence is only 14%. Other factors such as motivation and social support are also important. Schools and parents need to provide support.
14.	Title: Improving Mental Well-Being and Academic Achievement in High School Students Author: Year: 2024 Journal: Indonesian Research Journal on Education, Vol. 4, No. 2, Pages 2486-2490	Good mental well-being improves academic achievement. Social support, stress management, and extracurricular activities contribute positively. Schools should provide counseling services and emotional skills training.
15.	Title: The Influence of Mental Health on Learning Outcomes in SMK Negeri 3 Gunungsitoli Students Authors: Kristina Laia, Justin Foera-era Lase, Hosianna Rodearni Damanik, Elizama Zebua Year: 2024 Journal: Journal on Education, Vol. 7, No. 1, Pages 3480-3495	Mental health significantly influences academic achievement. School support, counseling guidance, and stress management are important to enhance learning outcomes. Teachers and parents need to provide better support.

Based on the findings from the 15 studies analyzed, it can be concluded that mental health plays a significant role in student academic achievement, influencing various aspects of learning outcomes across different educational contexts. The key findings from these studies emphasize the following:

1. **Impact of Mental Health on Learning Effectiveness:** Numerous studies highlight that good mental health positively affects students' learning effectiveness, as it enhances their motivation and cognitive function. In contrast, poor mental health, including mental disorders and stress, can reduce motivation, hinder cognitive function, and negatively affect academic performance. Therefore, maintaining students' mental well-being is crucial for improving academic achievement.
2. **Role of Support Systems:** Both school-based and external support systems, such as family, healthcare services, and social support networks, are identified as essential for maintaining students' mental health. These support systems help students cope with stress and other mental health challenges, thereby improving their academic outcomes.

Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

3. **The Importance of Stress Management:** Academic stress and cognitive load are found to negatively affect students' learning motivation and overall academic performance. Effective stress management techniques, such as emotional intelligence training, flexible teaching strategies, and counseling services, are recommended to mitigate these effects.
4. **Environment and Curriculum Influence:** Studies suggest that a supportive learning environment, whether it's an Islamic learning setting or one that prioritizes mental health education, can buffer the negative impacts of stress and enhance academic achievement. Furthermore, it is emphasized that schools should integrate mental health education into the curriculum and provide necessary training for teachers and school staff.
5. **Motivation and Achievement:** High motivation, both intrinsic and extrinsic, is identified as a strong predictor of academic success. Educational interventions aimed at boosting motivation, along with fostering a positive mental health environment, are necessary to help students overcome stress and achieve better academic outcomes.
6. **Need for Further Research:** Some studies indicate that while mental health plays an essential role, factors such as teaching methods, family support, and the learning environment may have a more significant influence on academic achievement in certain contexts. Further research is necessary to understand the complex interactions between these factors.

In conclusion, the studies reviewed collectively point to the critical importance of mental health in shaping students' academic performance. Educational institutions should prioritize mental health support, provide stress management programs, and engage families and communities to foster an environment conducive to both academic and emotional well-being.

Discussion

Student academic achievement is influenced by various factors, both internal and external, that affect their ability and academic performance. Two main factors commonly associated with academic achievement are mental health and academic stress. This article discusses the analysis results from several journals that examine the impact of mental health conditions, academic stress, and other factors influencing student academic performance. Additionally, this review also includes important implications for school learning.

1. The Influence of Mental Health on Student Academic Achievement

The analysis of 15 reviewed journals indicates that mental health has a significant and positive relationship with students' academic performance. Eight journals reveal that good mental health plays a role in improving motivation, memory, concentration, and critical thinking skills. For instance, Anggraini & Sukartono, (2022) noted that students with good mental health tend to achieve higher academic performance. However, they also found that mental health contributed only 14% to academic achievement, indicating the presence of other significant factors in academic success.

This view is supported by research from Kibtiyah et al. (2024), who argue that although mental health is important, factors such as the learning environment, teaching system, and family support play a more dominant role in influencing academic success. Therefore, a holistic approach is needed to improve student academic performance, one that considers mental health while strengthening other supporting factors.

Research by Lestari & Rista (2023) further emphasizes that poor mental health can lead to decreased motivation, concentration, and academic performance. Conversely, good mental health significantly contributes to effective learning, with a contribution of 25.7%. These findings highlight the importance of interventions such as counseling services, teacher training, and curricula that support student mental well-being to create a conducive learning environment for academic achievement.

An even more significant finding was revealed by Hawla et al. (2022), which showed that mental health has a very strong relationship with learning effectiveness, contributing 91%. Mentally stable students can focus more, stay motivated, and achieve better academic performance. On the other hand, mental disorders such as anxiety and stress can hinder concentration and enthusiasm for learning. Therefore, it is crucial for schools to provide psychosocial support, such as counseling services, and create a supportive learning environment.

The study by Lutiya et al. (2014) also reinforces these findings, showing that mental health plays a significant role in improving academic achievement, especially among stunted adolescents. They found a significant positive relationship between mental health and academic performance, with a correlation coefficient of 0.669. This result highlights the importance of collaborative efforts between schools, families, and healthcare services to support the mental health of stunted adolescents, thereby enhancing both their academic and psychological development.

In the context of Islamic education, Lara Setiawati et al. (2023) found that mental health influences the learning outcomes of Islamic Religious Education (PAI), with a contribution of 48%. Students with good mental health tend to be more confident, calm, and have a higher learning motivation, enabling them to understand the material better. Therefore, schools must ensure the presence of flexible learning strategies that are friendly to students' mental health.

2. The Influence of Academic Stress on Student Academic Achievement

Seven analyzed journals show that academic stress negatively impacts students' academic achievement. High stress can hinder cognitive processes, reduce learning motivation, and impair students' memory (Lazarus & Folkman, 1984). Puspitasari et al. (2024) emphasized that the higher the level of academic stress students experience, the lower their learning motivation.

Julika & Setiyawati (2019) also noted that academic stress can reduce students' subjective well-being, especially when they feel incapable of coping with academic pressures. However, they also found that high emotional intelligence can help students manage stress, minimizing its negative impact on academic achievement.

Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

The COVID-19 pandemic also posed its own challenges, as discovered by Astuti et al (2022) in a study on online learning. The academic stress faced by students due to increased assignments, limited facilities, and adapting to online learning negatively affected their academic performance. This finding underscores the importance of managing stress in online learning environments to help students perform well.

Ismartaya (2021) provides an additional perspective by distinguishing between positive stress (eustress) and negative stress (distress). He explains that eustress can enhance concentration and motivation for learning, while distress negatively affects academic outcomes. In this study, the Islamic learning environment was identified as a factor that helps students maintain mental calmness, thus supporting better academic achievement. Moreover, Kristanto (2017) also highlights learning fatigue as another form of stress, especially in mathematics learning. Fatigue caused by long study durations and heavy workloads can lower students' enthusiasm for learning. However, not all students experience decreased performance due to fatigue, as some remain motivated to maintain their achievements.

3. Other Factors Affecting Student Academic Achievement

In addition to mental health and academic stress, other factors contribute to students' academic success, such as learning motivation, learning environment, study habits, and social support. Learning motivation is an internal factor that greatly influences how students face academic challenges. Fitriyani et al. (2022) explain that students with structured study habits and high achievement motivation tend to be more enthusiastic and focused on learning, leading to better results.

Social support from family, teachers, and peers also has a significant impact on boosting students' confidence and learning resilience. F. F. Astuti & Ardi Zulhakim, (2021) emphasized that social support can be a vital buffer in coping with academic stress. Students who receive adequate emotional support are more resilient to academic pressures and maintain their performance.

A supportive learning environment is also crucial for academic achievement. Aditia et al. (2024) recommend that mental health education be included in the elementary school curriculum as part of a long-term strategy to enhance student well-being. With an environment that supports mental health, students will be better prepared to face academic challenges from an early age.

On the other hand, negative experiences such as bullying can interfere with students' motivation to learn. Nabilah & Romadlon (2024) revealed that bullying can reduce the learning motivation of most students, although some may feel driven to perform better as a form of self-improving. Therefore, the active role of teachers and parents is crucial in creating a safe and supportive school environment for all students.

Based on the findings above, several strategies can be implemented by schools to improve the effectiveness of learning. First, schools need to provide counseling services to help students manage academic stress. Additionally, it is essential to develop flexible and engaging teaching methods to reduce excessive academic pressure so that students do not feel burdened.

Furthermore, creating a school environment that supports students' mental health is also crucial, by providing adequate psychosocial support to ensure their well-being. Equally important is involving parents in providing emotional and academic support for their children, which can strengthen the learning process. By paying attention to the various factors influencing student academic achievement, it is hoped that school learning can be more effective, supporting both students' academic development and mental well-being optimally.

Conclusion

Based on the findings analyzed from various studies, it can be concluded that mental health plays a crucial role in students' academic achievement. Good mental health can enhance learning effectiveness by improving motivation, concentration, and cognitive function, while mental disorders such as stress and anxiety can hinder their learning ability. Support from various systems, such as family, schools, and healthcare services, is essential in maintaining students' mental health, which in turn improves their academic outcomes. Furthermore, effective stress management, such as emotional intelligence training and flexible teaching methods, can help students cope with academic pressure. A supportive learning environment, which includes mental health education, as well as social support from parents and peers, plays a significant role in creating an atmosphere conducive to academic success. Therefore, schools should implement strategies that promote students' mental well-being, with the aim of enhancing their overall academic performance.

References

- Aditia, I. M., Adhari, P. A., Rostika, D., & Sudarmansyah, R. (2024). Pentingnya Pendidikan Kesehatan Mental di Lingkungan Sekolah Dasar: Perspektif Guru dan Peserta Didik. *IJEDR: Indonesian Journal of Education and Development Research*, 2(2), 705–711. <https://doi.org/10.57235/ijedr.v2i2.1979>
- Akbar, M. A., Khairunnisa, K., Pepayosa, E., Sari, M. T., & Wahyuni, A. (2024). Kajian Literature: Pengaruh Bullying Terhadap Motivasi Belajar Siswa. *Jurnal Ilmiah Profesi Pendidikan*, 9(1), 76–81. <https://doi.org/10.29303/jipp.v9i1.1868>
- Anggraini, S., & Sukartono, S. (2022). Upaya Guru dalam Meningkatkan Motivasi Belajar Peserta Didik di Sekolah Dasar. *Jurnal Basicedu*, 6(3), 5287–5294. <https://doi.org/10.31004/basicedu.v6i3.3071>
- Astuti, F. F., & Ardi Zulhakim. (2021). Faktor-faktor yang Mempengaruhi Motivasi Belajar Siswa pada Mata Pelajaran Pendidikan Agama Islam di SD Negeri 115 Bengkulu Selatan. *Jurnal Pendidikan Islam Al-Affan*, 1(2), 227–234. <https://doi.org/10.69775/jpia.v1i2.35>
- Astuti, S., Rukmana, D., & Pramudiani, P. (2022). The role of teachers and parents to improve children's motivational learning in pandemic situation. *International Journal of Evaluation and Research in Education*, 11(3), 1162–1170. <https://doi.org/10.11591/ijere.v11i3.22583>

Impact of Mental Health and Stress on Academic Performance among Students: A Literature Review

- Fitriyani, F., Asrowi, A., & Hidayat, R. R. (2022). Keefektifan Teknik Mutual Storytelling untuk Meningkatkan Motivasi Belajar Siswa SD. *Jurnal Psikoedukasi dan Konseling*, 5(1), 47. <https://doi.org/10.20961/jpk.v5i1.49792>
- Hawla, N. A., Afrinaldi, A., Kamal, M., & Rahmi, A. (2022). Pengaruh Kesehatan Mental terhadap Efektivitas Belajar Siswa di SMAN 2 Koto Baru Dharmasraya. *Jurnal Pendidikan Tambusai*, 6(2), 8574–8581.
- Ilma, I., & Usodo, B. (2024). Improving creative thinking skills and learning motivation through ethnomathematics-based interactive multimedia: An experimental study in primary school. *Multidisciplinary Science Journal*, 6(8). <https://doi.org/10.31893/multiscience.2024141>
- Ismartaya. (2021). Pengaruh Motivasi, Stres, Dan Lingkungan Belajar Islami Terhadap Prestasi Belajar Dengan Lingkungan Belajar Islami Sebagai Variabel Intervening. *Jurnal Tabarru': Islamic Banking and Finance*, 4(1), 46–55. [https://doi.org/10.25299/jtb.2021.vol4\(1\).6203](https://doi.org/10.25299/jtb.2021.vol4(1).6203)
- Julika, S., & Setiyawati, D. (2019). Hubungan antara Kecerdasan Emosional, Stres Akademik, dan Kesejahteraan Subjektif pada Mahasiswa. *Gajah Mada Journal of Psychology (GamaJoP)*, 5(1), 50. <https://doi.org/10.22146/gamajop.47966>
- Kibtiyah, A., Gunadi, I., & Umam, K. (2024). Kesehatan Mental Dan Prestasi Belajar Siswa Sekolah Dasar. *Al-Adawat : Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 2(01), 12–22. <https://doi.org/10.33752/aldawat.v2i01.3723>
- Kristanto, V. H. (2017). Pengaruh Kejenuhan Belajar terhadap Prestasi Belajar Siswa dalam Pembelajaran Matematika. *Jurnal Ilmiah Universitas Katolik Widya Mandala Madiun, XLI*(02), 312–320.
- Lara Setiawati, Dodi Pasila Putra, Alfi Rahmi, & Hidayani Syam. (2023). Pengaruh Kesehatan Mental Terhadap Hasil Belajar Mata Pelajaran Pendidikan Agama Islam Di SMK Negeri 1 Bukittinggi. *Tabsyir: Jurnal Dakwah dan Sosial Humaniora*, 4(4), 01–18. <https://doi.org/10.59059/tabsyir.v4i4.320>
- Lestari, L., & Rista, N. (2023). Pengaruh Kesehatan Mental Terhadap Efektivitas Belajar Siswa Kelas Viii Pada Mata Pelajaran Ips Di Smp Negeri 20 Bekasi. *Research and Development Journal of Education*, 9(2), 881. <https://doi.org/10.30998/rdje.v9i2.19297>
- Lutiyah, Martini, E., Fauziyah, S., & Nurhilmiah, T. (2014). 濟無No Title No Title No Title. *Penambahan Natrium Benzoat Dan Kalium Sorbat (Antiinversi) Dan Kecepatan Pengadukan Sebagai Upaya Penghambatan Reaksi Inversi Pada Nira Tebu*, 4, 4187–4193.
- Nabilah, J., & Romadlon, D. A. (2024). *Faktor-Faktor Penyebab Kurangnya Motivasi Belajar Peserta Didik dalam Mata Pelajaran PAI di Sekolah Negeri*. 6(2), 592–608. <https://doi.org/10.19109/pairf.v6i2>
- Puspitasari, E. I., & Affandi, G. R. (2024). *Pengaruh Stres Akademik dan Cognitive Load Terhadap Motivasi Belajar Siswa*. 11(September), 374–388.