

RESEARCH

Received: April 29, 2026

Revised: May 31, 2026

Accepted: June 20, 2026

Academic Supervision And Adversity Quotient: Predictors Of Pedagogical Competence Among Madrasah Tsanawiyah Teachers

Khairani^{1*} and Sulastri²

***Correspondence:**

Khairani
khairanir96@gmail.com

¹Department of Educational Administration, Universitas Negeri Padang, Indonesia

²Department of Educational Administration, Universitas Negeri Padang, Indonesia

Abstract

Pedagogical competence is one of the key determinants of instructional quality in Madrasah Tsanawiyah. This study aimed to examine the effects of academic supervision by madrasah principals and teachers' Adversity Quotient (AQ) on pedagogical competence, both individually and simultaneously. A quantitative research approach employing a correlational design was adopted. The study population comprised 818 Madrasah Tsanawiyah teachers in Rokan Hilir Regency, Indonesia, from which 124 respondents were selected using a multistage cluster stratified random sampling technique. Data were collected through Likert-scale questionnaires that had been validated and confirmed to be reliable. The data were analyzed using descriptive statistics, simple linear regression, and multiple linear regression with the aid of IBM SPSS Statistics version 27. The findings revealed that academic supervision had a positive and statistically significant effect on teachers' pedagogical competence, explaining 76.8% of its variance ($R^2 = 0.768$). Similarly, Adversity Quotient exerted a positive and significant influence, accounting for 51.7% of the variance in pedagogical competence ($R^2 = 0.517$). Furthermore, academic supervision and Adversity Quotient jointly had a positive and statistically significant effect on teachers' pedagogical competence ($R = 0.879$, $R^2 = 0.773$, $F = 206.234$, $p < .001$), indicating that both variables collectively explained 77.3% of the variance in pedagogical competence. These findings underscore that strengthening academic supervision and enhancing teachers' resilience in coping with professional challenges through a higher Adversity Quotient are essential strategies for improving the pedagogical competence of Madrasah Tsanawiyah teachers.

Keywords: Academic supervision; Adversity Quotient; Pedagogical competence; Madrasah Tsanawiyah teachers; Teacher resilience.

Introduction

Pedagogical competence is one of the core competencies that teachers must possess to ensure the delivery of high-quality instruction. It encompasses the ability to understand students' characteristics, design effective learning experiences, implement appropriate instructional strategies, integrate educational technologies, conduct comprehensive assessments, and facilitate the optimal development of students' potential. Previous studies have consistently demonstrated that teachers' pedagogical competence is closely associated with improved instructional quality, greater student engagement, and enhanced learning outcomes (Darling-

Hammond, 2017; Hattie, 2023). Consequently, strengthening teachers' pedagogical competence has become a strategic priority in educational development across many countries.

In Indonesia, improving teachers' competence remains a major educational challenge. National evaluation reports indicate that teachers' abilities to implement differentiated instruction, apply authentic assessment, and effectively integrate digital learning technologies remain uneven. These challenges are reflected in the indicators reported in the Indonesian Education Report Card (Rapor Pendidikan Indonesia), which reveal that the quality of classroom instruction still requires significant improvement, particularly in promoting student-centered learning and strengthening teacher professionalism (Ministry of Primary and Secondary Education of the Republic of Indonesia, 2025). Furthermore, the implementation of the Merdeka Curriculum demands that teachers possess more adaptive pedagogical competencies to respond to the evolving paradigm of twenty-first-century education.

As Islamic junior secondary schools administered by the Ministry of Religious Affairs, Madrasah Tsanawiyah face equally complex educational challenges. Madrasah teachers are expected not only to demonstrate pedagogical competence in accordance with the National Education Standards but also to integrate Islamic values into the teaching and learning process. Nevertheless, empirical studies indicate that gaps in teachers' pedagogical competence persist and are influenced by both organizational and individual factors (Mulyasa, 2023; Rifma, 2022). These findings suggest that improving pedagogical competence requires a comprehensive approach that simultaneously considers external organizational support and teachers' internal capacities.

One organizational factor that has been widely recognized as influencing teachers' pedagogical competence is academic supervision conducted by madrasah principals. Academic supervision refers to a systematic professional development process designed to improve instructional quality through collaborative planning, classroom observation, constructive feedback, reflective practice, and continuous follow-up (Glickman et al., 2018). Unlike administrative supervision, which primarily emphasizes compliance with regulations, academic supervision focuses on enhancing teachers' professional growth through collaborative interactions between principals and teachers. In this context, madrasah principals function as instructional leaders who provide guidance, motivation, and professional support to facilitate continuous teacher development (Sergiovanni & Starratt, 2020). Previous studies have demonstrated that effective academic supervision contributes significantly to improving instructional quality, teacher professionalism, and pedagogical competence (Prasojo & Sudiyo, 2021).

In addition to organizational factors, teachers' pedagogical competence is also influenced by individual psychological characteristics. One construct that has received increasing scholarly attention is the Adversity Quotient (AQ). AQ refers to an individual's capacity to cope with adversity, manage pressure, sustain motivation, and recover from challenges in order to achieve optimal performance (Stoltz, 2000). Within educational settings, teachers with higher AQ tend to demonstrate greater psychological resilience when confronted with curriculum reforms, technological advancements, administrative responsibilities, and the diverse challenges of classroom instruction. Conversely, teachers with lower AQ are more susceptible to occupational stress, emotional exhaustion, and declining instructional quality. Therefore, AQ is increasingly regarded as an important component of teachers' psychological capital that supports the development of pedagogical competence (Luthans et al., 2021).

Although the relationships between academic supervision, Adversity Quotient, and pedagogical competence have been investigated in previous studies, the existing evidence remains inconclusive. Some studies have reported that academic supervision significantly enhances teachers' pedagogical competence, whereas others have found relatively limited effects due to the inconsistent implementation of supervision and its predominant focus on administrative compliance rather than professional development. Likewise, research on AQ has primarily concentrated on work motivation, job satisfaction, and teacher performance, while studies examining AQ as a predictor of pedagogical competence among madrasah teachers remain scarce. Furthermore, most previous research has been conducted in general schools, leaving the distinctive context of Madrasah Tsanawiyah largely unexplored.

These limitations indicate a clear research gap that warrants further investigation into the factors predicting teachers' pedagogical competence within the context of Madrasah Tsanawiyah. This study addresses this gap by integrating academic supervision as an organizational factor and Adversity Quotient as an individual psychological factor into a single predictive model. Such an integrative approach is expected to provide a more comprehensive understanding of the determinants of teachers' pedagogical competence.

The novelty of this study lies in the development of a predictive model of pedagogical competence among Madrasah Tsanawiyah teachers by combining instructional leadership through academic supervision with teachers' psychological resilience as reflected in their Adversity Quotient. Unlike previous studies that have examined these variables independently, this research investigates their simultaneous contribution to predicting teachers' pedagogical competence within the specific context of Madrasah Tsanawiyah.

Accordingly, this study aims to examine the effects of academic supervision by madrasah principals and teachers' Adversity Quotient on the pedagogical competence of Madrasah Tsanawiyah teachers, both individually and simultaneously. The findings are expected to contribute to the theoretical advancement of academic supervision and educational psychology while providing practical implications for madrasah principals and educational policymakers in designing more effective strategies to enhance teachers' pedagogical competence.

Method

This study employed a quantitative approach using a correlational research design to examine the effects of academic supervision by madrasah principals and Adversity Quotient (AQ) on the pedagogical competence of Madrasah Tsanawiyah teachers. A quantitative approach was considered appropriate because the study focused on examining the relationships among variables based on numerical data analyzed using inferential statistical techniques.

The study was conducted in Madrasah Tsanawiyah located in Rokan Hilir Regency, Riau Province, Indonesia. The target population consisted of 818 teachers from 71 public and private Madrasah Tsanawiyah. The sample size was determined using Cochran's sample size formula, resulting in 124 teachers as research participants. The respondents were selected using a multistage cluster stratified random sampling technique, ensuring that every teacher had an equal opportunity to be selected in proportion to the number of teachers in each madrasah.

Data were collected using a five-point Likert-scale questionnaire. The academic supervision variable (X_1) was measured using six indicators: supervision planning, supervision implementation, classroom observation, feedback provision, supervisory follow-up, and teachers' professional development. The Adversity Quotient (AQ) variable (X_2) was measured based on the four

dimensions proposed by Stoltz (2000): Control, Ownership, Reach, and Endurance. Meanwhile, the teachers' pedagogical competence variable (Y) was assessed through indicators covering understanding students' characteristics, mastery of learning theories, curriculum development, instructional planning, instructional implementation, integration of educational technology, learning assessment, and the development of students' potential, in accordance with the pedagogical competency standards stipulated in Indonesia's national education regulations.

Prior to data collection, the research instrument was subjected to validity and reliability testing. Construct validity was assessed using the Pearson Product–Moment correlation coefficient, whereas reliability was evaluated using Cronbach's Alpha coefficient. Questionnaire items were considered valid when the obtained correlation coefficient exceeded the critical r-table value at the 5% significance level. The instrument was considered reliable when the Cronbach's Alpha coefficient was greater than 0.70.

Data analysis was conducted in several stages. Descriptive statistics were first employed to summarize the characteristics of each variable using means, percentages, and achievement categories. Subsequently, multiple linear regression analysis was performed to examine the effects of academic supervision and Adversity Quotient on teachers' pedagogical competence. Prior to hypothesis testing, the regression model was evaluated through classical assumption tests, including normality, linearity, multicollinearity, and heteroscedasticity tests. Hypothesis testing involved the t-test to examine the partial effects of each independent variable, the F-test to determine their simultaneous effects, and the coefficient of determination (R^2) to assess the proportion of variance in teachers' pedagogical competence explained by the independent variables. All statistical analyses were performed using IBM SPSS Statistics version 27, with the significance level set at 0.05.

Results

Descriptive Statistics of the Research Variables

Descriptive statistical analysis was conducted to describe the levels of academic supervision by madrasah principals, Adversity Quotient (AQ), and the pedagogical competence of Madrasah Tsanawiyah teachers. The analysis included the mean, standard deviation, percentage of achievement, and category of each research variable.

Table 1. Descriptive Statistics of the Research Variables

Variable	Mean	SD	Percentage	Category
Academic Supervision	100.35	5.409	80.28%	High
Adversity Quotient	80.33	4.706	80.33%	High
Pedagogical Competence	181.44	6.543	80.51%	High

Table 1 presents the descriptive statistics of the study variables. Teachers' pedagogical competence obtained a mean score of 181.44 (SD = 6.543), with an achievement percentage of 80.51%. Academic supervision recorded a mean score of 100.35 (SD = 5.409), corresponding to an achievement level of 80.28%. Meanwhile, Adversity Quotient obtained a mean score of 80.33 (SD = 4.706), with an achievement percentage of 80.33%.

Assumption Testing

Before hypothesis testing, classical assumption tests were conducted to determine whether the regression model met the assumptions required for multiple linear regression analysis.

Normality Test

The normality test was performed using the One-Sample Kolmogorov Smirnov Test.

Table 2. Results of the Normality Test

Variable	Asymp. Sig.	Interpretation
Academic Supervision	0.200	Normally Distributed
Adversity Quotient	0.175	Normally Distributed
Pedagogical Competence	0.200	Normally Distributed

The results showed that the Academic Supervision variable obtained an Asymp. Sig. value of 0.200, the Adversity Quotient variable obtained an Asymp. Sig. value of 0.175, and the Pedagogical Competence variable obtained an Asymp. Sig. value of 0.200. Since all significance values exceeded 0.05, the data met the assumption of normality.

Linearity Test

The linearity test was conducted to examine the linear relationship between the independent variables and the dependent variable.

Table 3. Results of the Linearity Test

Variable Relationship	Sig. Linearity	Sig. Deviation from Linearity	Interpretation
Academic Supervision → Pedagogical Competence	0.440	0.755	Linear
Adversity Quotient → Pedagogical Competence	0.083	0.689	Linear

The relationship between Academic Supervision and Pedagogical Competence produced a Sig. Deviation from Linearity value of 0.755, while the relationship between Adversity Quotient and Pedagogical Competence produced a value of 0.689. Both values exceeded 0.05, indicating that the relationships were linear.

Multicollinearity Test

The multicollinearity test was conducted using the tolerance and Variance Inflation Factor (VIF) values.

Table 4. Results of the Multicollinearity Test

Independent Variable	Tolerance	VIF	Interpretation
Academic Supervision (X_1)	0.999	1.001	No multicollinearity
Adversity Quotient (X_2)	0.999	1.001	No multicollinearity

The results showed that both independent variables had tolerance values of 0.999 and VIF values of 1.001, indicating that the regression model did not exhibit multicollinearity.

Heteroscedasticity Test

The heteroscedasticity test was performed using the Glejser test.

Table 5. Results of the Heteroscedasticity Test

Variable	Sig.	Interpretation
Academic Supervision	0.094	> 0.05 (No heteroscedasticity)
Adversity Quotient	0.620	> 0.05 (No heteroscedasticity)

The significance value for Academic Supervision was 0.094, whereas Adversity Quotient obtained a significance value of 0.620. Both values were greater than 0.05, indicating that the regression model satisfied the assumption of homoscedasticity.

Hypothesis Testing

Effect of Academic Supervision on Teachers' Pedagogical Competence

The results of the simple linear regression analysis indicated that Academic Supervision had a positive and statistically significant effect on teachers' Pedagogical Competence.

Table 6. Results of the Simple Linear Regression Analysis of Academic Supervision on Teachers' Pedagogical Competence

Variable	B	Beta	t	Sig.	R	R ²	F
Constant	-1.233	–	-0.130	0.897			
Academic Supervision (X ₁)	2.076	0.876	20.084	< 0.001	0.876	0.768	403.359

The analysis produced a correlation coefficient (R) of 0.876 and a coefficient of determination (R²) of 0.768. The regression model yielded an F value of 403.359 ($p < 0.001$), while the regression coefficient for Academic Supervision was 2.076 with $t = 20.084$ ($p < 0.001$). These results indicate that Academic Supervision had a positive and statistically significant effect on teachers' Pedagogical Competence.

Effect of Adversity Quotient on Teachers' Pedagogical Competence

Table 7. Results of the Simple Linear Regression Analysis of Adversity Quotient on Teachers' Pedagogical Competence

Variable	B	Beta	t	Sig.	R	R ²	F
Constant	14.001	–	0.917	0.361			
Adversity Quotient (X ₂)	2.298	0.719	11.424	< 0.001	0.719	0.517	130.503

The regression analysis produced a correlation coefficient (R) of 0.719 and a coefficient of determination (R²) of 0.517. The regression model yielded an F value of 130.503 ($p < 0.001$), while the regression coefficient for Adversity Quotient was 2.298 with $t = 11.424$ ($p < 0.001$). These findings indicate that Adversity Quotient had a positive and statistically significant effect on teachers' Pedagogical Competence.

Simultaneous Effect of Academic Supervision and Adversity Quotient on Teachers' Pedagogical Competence

Table 8. Results of the Multiple Linear Regression Analysis of Academic Supervision and Adversity Quotient on Teachers' Pedagogical Competence

Statistic	Value
R	0.879
R Square	0.773
Adjusted R Square	0.769
F	206.234
Sig.	< 0.001
Decision	H ₀ rejected; H ₁ accepted

The multiple regression analysis produced a correlation coefficient (R) of 0.879 and a coefficient of determination (R^2) of 0.773. The ANOVA test yielded an F value of 206.234 with a significance level of $p < 0.001$. These findings indicate that Academic Supervision and Adversity Quotient simultaneously had a positive and statistically significant effect on the Pedagogical Competence of Madrasah Tsanawiyah teachers.

Discussion

Academic Supervision and Teachers' Pedagogical Competence

The findings of this study demonstrate that academic supervision has a positive and statistically significant effect on the pedagogical competence of Madrasah Tsanawiyah teachers. The regression analysis revealed a very strong relationship ($R = 0.876$), with academic supervision explaining 76.8% of the variance in pedagogical competence ($R^2 = 0.768$). These findings indicate that effective academic supervision constitutes a major organizational factor influencing teachers' ability to plan, implement, and evaluate learning activities in accordance with professional standards.

This finding supports the instructional leadership theory proposed by Glickman et al. (2007), which emphasizes that academic supervision is not merely an administrative activity but a continuous professional development process designed to improve teachers' instructional practices through planning, classroom observation, constructive feedback, and follow-up coaching. When principals consistently implement these supervisory activities, teachers receive continuous guidance that facilitates the improvement of pedagogical competence (Glickman et al., 2007).

The findings are also consistent with previous empirical studies reporting that effective academic supervision significantly contributes to improving teacher professionalism and pedagogical competence. Rifma et al. (2021) found that systematic academic supervision enhances teachers' instructional quality through reflective practice and professional assistance. Similarly, Setiawati et al. (2025) reported that effective supervision conducted by school principals positively influences teacher professionalism by strengthening instructional management and continuous professional development. These studies reinforce the present finding that academic supervision functions as a strategic mechanism for enhancing pedagogical competence.

From a practical perspective, the very high coefficient of determination (76.8%) indicates that strengthening academic supervision programs should become one of the primary priorities for

madrasah management. Rather than emphasizing administrative compliance alone, supervision should prioritize mentoring, collaborative reflection, instructional coaching, and continuous professional support so that teachers can continuously improve the quality of classroom instruction. Such an approach is consistent with contemporary perspectives on instructional leadership that position school principals as facilitators of teacher learning and professional growth (Sulastrri et al., 2025).

Adversity Quotient and Teachers' Pedagogical Competence

The present study also found that Adversity Quotient (AQ) positively and significantly influences teachers' pedagogical competence. The regression analysis showed that AQ explained 51.7% of the variance in pedagogical competence ($R^2 = 0.517$), indicating that teachers' psychological resilience substantially contributes to their professional capability in instructional practice. These findings are in line with Stoltz's (1997) Adversity Quotient theory, which argues that individuals possessing high resilience are better able to overcome challenges, adapt to changing environments, and maintain optimal performance despite various obstacles. Within educational settings, teachers with higher AQ are more capable of responding constructively to curriculum changes, technological developments, increasing administrative responsibilities, and diverse classroom situations.

The present findings are consistent with several previous empirical studies. Widodo et al. (2022) demonstrated that Adversity Quotient contributes more strongly to teachers' professional competence than emotional intelligence, highlighting resilience as an essential psychological resource for professional development. Likewise, Ichsan et al. (2025) reported that AQ improves teachers' resilience and psychological well-being, thereby supporting higher professional performance. Similar conclusions were reported by Kumari and Arora (2023), who found that teachers with stronger adversity management skills experience lower occupational stress and maintain better instructional quality.

These findings further suggest that improving pedagogical competence requires attention not only to organizational support but also to teachers' psychological capacity. Consequently, professional development programs should incorporate resilience training, stress management, adaptive coping strategies, and psychological strengthening alongside pedagogical training. Such integrated development programs are expected to enhance teachers' instructional effectiveness in increasingly complex educational environments (Reintjes et al., 2025; Baatz & Wirzberger, 2025).

Simultaneous Effects of Academic Supervision and Adversity Quotient

The multiple regression analysis demonstrated that academic supervision and Adversity Quotient jointly exert a positive and statistically significant influence on teachers' pedagogical competence. The combined explanatory power reached 77.3% ($R^2 = 0.773$), indicating that these organizational and psychological factors collectively explain most of the variation in pedagogical competence among Madrasah Tsanawiyah teachers. This finding indicates that pedagogical competence is multidimensional and cannot be fully explained by organizational factors alone. While effective academic supervision provides professional guidance and instructional support, teachers' psychological resilience enables them to implement feedback, adapt to educational change, and sustain instructional quality under challenging conditions. Therefore, organizational support and individual resilience complement one another in fostering teacher competence.

These findings support competency theory proposed by Spencer and Spencer (1993), which argues that superior professional performance results from the interaction between organizational environments and individual competencies. Likewise, Gibson et al. (2012) emphasize that employee

performance is shaped by organizational systems together with individual characteristics, including motivation, resilience, and adaptive capacity. Accordingly, strengthening only one aspect may not produce optimal improvements in teacher competence.

The findings are also consistent with recent educational studies emphasizing integrated teacher development. Hollenstein and Brühwiler (2024) reported that pedagogical competence develops through the interaction between professional knowledge and psychological resources. Similarly, Reintjes et al. (2025) emphasized that resilient teachers are better prepared to maintain instructional quality during periods of educational transformation. Therefore, policies designed to improve pedagogical competence should integrate high-quality academic supervision with programs that strengthen teachers' resilience and psychological well being.

Overall, the findings of this study contribute to the literature by demonstrating that pedagogical competence among Madrasah Tsanawiyah teachers is simultaneously influenced by organizational support through academic supervision and individual psychological resilience through Adversity Quotient. This integrated perspective extends previous studies that generally examined these variables separately and provides empirical evidence supporting more comprehensive teacher professional development strategies within the context of Islamic secondary education.

Conclusion

The findings of this study demonstrate that both academic supervision by madrasah principals and teachers' Adversity Quotient (AQ) significantly contribute to the pedagogical competence of Madrasah Tsanawiyah teachers. Academic supervision emerged as the strongest predictor, while Adversity Quotient also made a significant contribution to explaining teachers' pedagogical competence. Collectively, these organizational and psychological factors accounted for a substantial proportion of the variance in pedagogical competence, indicating that both external professional support and internal resilience are essential for improving teachers' instructional capability.

Theoretically, this study extends the literature by integrating academic supervision and Adversity Quotient into a single predictive model of pedagogical competence within the context of Madrasah Tsanawiyah. The findings suggest that teacher competence is shaped through the interaction between organizational support and individual psychological capacity rather than by either factor alone. Practically, the results imply that madrasah principals and educational policymakers should implement sustainable academic supervision programs while simultaneously strengthening teachers' resilience through continuous professional development initiatives.

This study is limited to Madrasah Tsanawiyah teachers in one regency of Indonesia and focuses on two predictor variables. Future research is encouraged to include broader educational contexts and additional organizational, psychological, or instructional variables to develop a more comprehensive understanding of the determinants of teachers' pedagogical competence.

Acknowledgements

The author would like to express sincere gratitude to all individuals and institutions that contributed to the successful completion of this study. Special appreciation is extended to the Head of the Ministry of Religious Affairs Office of Rokan Hilir Regency, the Madrasah Tsanawiyah Supervisors, the Principals of Madrasah Tsanawiyah, and all participating teachers for their valuable cooperation and support throughout the research process. The author also gratefully acknowledges everyone who assisted in the data collection process and contributed to the successful completion of this research.

References

- Baatz, J., & Wirzberger, M. (2025). Resilience as a professional competence: A new way towards healthy teachers? *Social Psychology of Education*, 28, 56. <https://doi.org/10.1007/s11218-024-10010-8>
- Cahyanti, A. D., Purwoko, B., Khamidi, A., Hariyati, N., & Roesminingsih, E. (2024). Fostering student motivation through teacher competence. *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, 5(1), 751–758. <https://doi.org/10.62775/edukasia.v5i1.846>
- Ekawati, V., Fitria, H., & Mulyadi, M. (2023). Pengaruh kompetensi pedagogik dan profesional terhadap kinerja guru SMP Negeri di Kecamatan Pangkalan Lampam. *Journal on Education*, 5(3), 7968–7977. <https://doi.org/10.31004/joe.v5i3.1587>
- Fatimah, D. N. (2024). *Kompetensi guru: Pedagogi, kepribadian, sosial, dan profesional* (1st ed.). Nafal Publishing.
- Febriana, R. (2021). *Kompetensi guru*. Bumi Aksara.
- Gibson, J. L., Ivancevich, J. M., Donnelly, J. H., Jr., & Konopaske, R. (2012). *Organizations: Behavior, structure, processes* (14th ed.). McGraw-Hill.
- Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2007). *SuperVision and instructional leadership: A developmental approach* (7th ed.). Allyn & Bacon.
- Hollenstein, L., & Brühwiler, C. (2024). The importance of teachers' pedagogical-psychological teaching knowledge for successful teaching and learning. *Journal of Curriculum Studies*, 56(4), 480–495. <https://doi.org/10.1080/00220272.2024.2328042>
- Ichsan, I., Santosa, S., Aulia, M. G., Rifai, I., & Munajat, N. (2025). Analysis of the effect of self-regulation and adversity quotient on resilience and its implications for the psychological well-being of Islamic religious education teachers. *Nazhruna: Jurnal Pendidikan Islam*, 8(3), 607–626. <https://doi.org/10.31538/nzh.v8i3.274>
- Karsiwan, W. (2022). *Manajemen pengembangan kompetensi guru: Teori, model, dan hasil studi*. Indonesia Emas Group.
- Kartikasari, N. P. D., & Wiarta, I. W. (2021). The contribution of adversity quotient and working motivation to teachers' performance. In *Proceedings of the 2nd International Conference on Technology and Educational Science (ICTES 2020)*. Atlantis Press. <https://doi.org/10.2991/assehr.k.210407.280>
- Kumari, K., & Arora, R. (2023). Adversity quotient, perceived mental health, and role stress of college teachers. *E3S Web of Conferences*, 453, Article 01021. <https://doi.org/10.1051/e3sconf/202345301021>
- Kunandar. (2014). *Guru profesional: Implementasi Kurikulum Tingkat Satuan Pendidikan (KTSP) dan sukses dalam sertifikasi guru* (8th ed.). Rajawali Pers.
- Lickona, T. (1992). *Educating for character: How our schools can teach respect and responsibility*. Bantam Books.
- Marlina, D., Lian, B., & Eddy, S. (2021). The effect of teacher competence and student motivation on learning outcomes for students. *Jurnal Pendidikan Tambusai*, 5(2), 4988–4994. <https://doi.org/10.31004/jptam.v5i2.1738>
- Menik, J. E., Effendi, M., & Matore, E. M. (2023). Trend analysis of adversity quotient (AQ) of mathematics teachers: A systematic literature review. *International Journal of Academic Research in Progressive Education and Development*, 12(1). <https://doi.org/10.6007/IJARPED/v12-i1/16248>
- Muhaimin, M. (2025). Manajemen adversity quotient dalam meningkatkan kinerja dan profesionalisme guru di Kotabaru. *Jurnal Riset Rumpun Ilmu Pendidikan*, 4(1), 798–810.

- <https://doi.org/10.55606/jurripen.v4i1.6264>
- Mulyasa, E. (2009). Standar kompetensi dan sertifikasi guru. Remaja Rosdakarya.
- Nawangsih, S. K., Wangge, M. Y. W., Katkar, K. K., & Pribadi, A. S. (2025). Pelatihan adversity quotient untuk optimalisasi pribadi yang tangguh pada pendidik PAUD. *Jurnal Abdimas Madani dan Lestari (JAMALI)*, 7(2), 282–289. <https://doi.org/10.20885/jamali.vol7.iss2.art13>
- Nurmayuli. (2020). Faktor-faktor yang mempengaruhi kompetensi pedagogik guru. *Al Mabhats: Jurnal Penelitian Sosial Agama*, 5(1), 77–104. <https://journal.uinsuna.ac.id/index.php/AlMabhats/article/view/3007>
- Otaya, L. G., Anwar, H., Yahiji, K., & Rahmawati. (2023). The assessment of fit data model feasibility of the teachers' pedagogic competency variables. *International Journal of Instruction*, 16(2), 909–926. <https://doi.org/10.29333/iji.2023.16248a>
- Reintjes, C., Kaiser, T., Winter, I., & Bellenberg, G. (2025). Resilient teachers in a strained system: Mental health and resilience amidst school transformation processes. *Educational Sciences*, 15(9), Article 1251. <https://doi.org/10.3390/educsci15091251>
- Rifma. (2016). Optimalisasi pembinaan kompetensi pedagogik guru. Kencana.
- Rifma, Ulfah, V. T., Santoso, Y., & Ernita, E. (2021). Komparasi pelaksanaan supervisi akademik kepala sekolah di SMKN 1 Padang Gelugur dengan SMKN 1 Rao Selatan. *Journal of Educational Administration and Leadership*, 2(2), 236–242.
- Rifma, Rusdinal, Marsidin, S., & Meizatri, R. (2022). Pelatihan supervisi berbasis kategori guru bagi kepala sekolah dasar Kota Solok. *Jurnal Pengabdian dan Pemberdayaan Masyarakat*, 4(2), 472–479. <https://doi.org/10.24036/abdi.v4i2.357>
- Sagala, S. (2014). Konsep dan makna pembelajaran: Untuk membantu memecahkan problematika belajar dan mengajar (1st ed.). Alfabeta.
- Saxena, S., & Rathore, B. (2025). Adversity quotient as a determining factor of mental health and professional quality of life among healthcare professionals: A systematic review. *Annals of Neurosciences*, 32(1), 58–65. <https://doi.org/10.1177/09727531241231055>
- Setiawati, M., Afrizul, M. R., Irsyad, I., & Afriansyah, H. (2025). Hubungan supervisi akademik kepala sekolah dengan profesionalisme guru SMA Negeri se-Kota Pariaman. *Indonesia Journal of Administration or Management in Education (IJAM-Edu)*, 2(2), 312–322.
- Setiawati, M., Fournanda, A. C., Zahra, H., Anjelina, M. D., & Utama, H. B. (2025). Tantangan dan solusi dalam manajemen kurikulum di era digital. *Jurnal Ilmu Manajemen dan Pendidikan*, 2(1), 154–158.
- Sinar. (2023). Kompetensi pedagogik. Bintang Semesta Media.
- Slameto. (2020). Belajar dan faktor-faktor yang memengaruhinya. Rineka Cipta.
- Spencer, L. M., & Spencer, S. M. (1993). Competence at work: Models for superior performance. John Wiley & Sons.
- Stoltz, P. G. (1997). Adversity quotient: Turning obstacles into opportunities. John Wiley & Sons.
- Sudjana, N., & Rivai, A. (2019). Media pengajaran (14th ed.). Sinar Baru Algesindo.
- Sugiyono. (2020). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.
- Sulastri, S., Hadiyanto, H., & Syahril. (2025). Analysis of the needs of the principal's servant leadership model in the era of Revolution 6.0 for teacher professional development. In *Proceedings of the International Conference on Educational Science and Teacher Education (ICESTE 2025)* (pp. 162–175). Atlantis Press. https://doi.org/10.2991/978-2-38476-489-1_14
- Sulastri, S., Jasrial, J., & Putra, M. K. A. (2022). Development of e-book teaching materials in

- improving student literacy. *Educational Sciences: Theory & Practice*, 22, 62–77. <https://doi.org/10.12738/jestp.2022.1.0006>
- Sulastri, S., Jaya, I., Erlina, Marlinda, Marsidin, S., & Rifma. (2025). Strategi supervisi SDM untuk meningkatkan profesionalisme guru PGSD di sekolah dasar. *Journal of Educational Administration and Leadership*, 5(1), 42–50.
- Suyo-Vega, J. A., Fernández-Bedoya, V. H., Meneses-La-Riva, M. E., & Moreira, M. A. (2024). Beyond traditional teaching: A systematic review of innovative pedagogical practices in higher education. *F1000Research*, 13, Article 22. <https://doi.org/10.12688/f1000research.143392.2>
- Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. Jossey-Bass.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Waridah, W., & Tirsa, A. (2022). Peningkatan kompetensi pedagogik guru dalam proses belajar mengajar sekolah dasar di Kabupaten Melawi. *Jurnal Pendidikan Dasar*, 10(2), 296–314. <https://doi.org/10.46368/jpd.v10i2.941>
- Widodo, W., Gustari, I., & Chandrawaty, C. (2022). Adversity quotient promotes teachers' professional competence more strongly than emotional intelligence: Evidence from Indonesia. *Journal of Intelligence*, 10(3), Article 44. <https://doi.org/10.3390/jintelligence10030044>
- Zhao, Y., & Sang, B. (2023). The role of emotional quotient and adversity quotient in career success. *Frontiers in Psychology*, 14, Article 1128773. <https://doi.org/10.3389/fpsyg.2023.1128773>