

Teacher Support as a Predictor of Student Engagement among Students in Sleman Regency: The Mediating Role of Intrinsic Motivation

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e-ISSN: 2964-2981

ARMADA : Jurnal Penelitian Multidisiplin

<https://ejournal.45mataram.ac.id/index.php/armada>

Vol. 04, No. 08 Agustus, 2026

Page: 4336-4345

DOI:

<https://doi.org/10.55681/armada.v4i8.3547>

Article History:

Received: Juni 13, 2026

Revised: Juli 28, 2026

Accepted: Agustus 18, 2026

Abstract : This study aims to examine the effects of teacher support on student engagement and intrinsic motivation, the effect of intrinsic motivation on student engagement, and the mediating role of intrinsic motivation among upper-secondary students in Sleman Regency, Indonesia. A quantitative survey involved 384 students selected through stratified random sampling. Data were collected using validated Likert-scale questionnaires and analysed through multiple regression and mediation analysis with 5,000 bootstrap resamples. The findings showed that teacher support positively affected student engagement ($\beta = 1.770$; $p < 0.001$) and intrinsic motivation ($\beta = 0.913$; $p < 0.001$). Intrinsic motivation also positively affected student engagement ($\beta = 1.410$; $p < 0.001$). The indirect effect through intrinsic motivation was significant ($\beta = 0.849$; $p < 0.001$), while the direct effect remained significant ($\beta = 0.916$; $p < 0.001$), indicating partial mediation. Based on Self-Determination Theory, findings confirm direct and motivational pathways linking teacher support with student engagement.

Keywords : Teacher Support; Intrinsic Motivation; Student Engagement; Students

Abstrak : Penelitian ini bertujuan menguji pengaruh teacher support terhadap student engagement dan intrinsic motivation, pengaruh intrinsic motivation terhadap student engagement, serta peran mediasi intrinsic motivation pada siswa sekolah menengah atas di Kabupaten Sleman, Indonesia. Penelitian menggunakan pendekatan kuantitatif dengan desain survei terhadap 384 siswa yang dipilih melalui stratified random sampling. Data dikumpulkan menggunakan kuesioner skala Likert tervalidasi dan dianalisis dengan regresi berganda serta analisis mediasi bootstrapping 5.000 resamples. Hasil menunjukkan bahwa teacher support berpengaruh positif terhadap student engagement ($\beta = 1,770$; $p < 0,001$) dan intrinsic motivation ($\beta = 0,913$; $p < 0,001$). Intrinsic motivation juga berpengaruh positif terhadap student engagement ($\beta = 1,410$; $p < 0,001$). Efek tidak langsung melalui intrinsic motivation signifikan ($\beta = 0,849$; $p < 0,001$), sementara efek langsung tetap signifikan ($\beta = 0,916$; $p < 0,001$), menunjukkan mediasi parsial. Berdasarkan Self-Determination Theory, temuan menegaskan bahwa dukungan guru meningkatkan keterlibatan siswa secara langsung maupun melalui penguatan motivasi intrinsik.

Kata Kunci Dukungan Guru; Motivasi Intrinsik; Keterlibatan Siswa; Siswa

INTRODUCTION

Student engagement is an important indicator that determines academic success, psychological development, and long-term educational success (Fredricks et al., 2004, 2018; Reschly & Christenson, 2022). Student engagement is not only reflected through participation in learning activities, but also includes the behavioral, cognitive, and emotional investments that students make during the learning process (Appleton et al., 2006; Reeve & Tseng, 2011). Students with high levels of engagement tend to demonstrate better academic achievement, higher self-regulation skills, and more optimal psychological well-being than students with low levels of engagement (Fredricks et al., 2018; Peters et al., 2019). On the other hand, low student engagement is associated with various negative consequences, such as decreased academic achievement, increased academic burnout, low motivation to learn, and the risk of dropping out of school (Wang & Pan, 2025; Woreta, 2024; Zhou, 2021). Therefore, increasing student engagement is one of the main focuses in educational psychology research (Reschly & Christenson, 2022).

The problem of student engagement remains a challenge in various countries, including Indonesia (Pascoe et al., 2020; Savitri et al., 2024). The results of the National Education Report Card show that only around 52.3% of high school students showed active involvement in learning, while the rest were still in the low involvement category (Kemendikdasmen, 2022). This situation is also evident in the Special Region of Yogyakarta. A report from the Ministry of Education's Policy Research Center shows that most high school teachers in Yogyakarta still encounter passive students during lessons, reluctant to ask questions, less likely to participate in discussions, and avoid assignments requiring higher-order thinking skills (Hartati & Utomo, 2026). At the same time, several studies in Sleman showed that academic pressure and symptoms of academic burnout were related to decreased student engagement in the learning process (Azizah & Setiawati, 2023; Kusyanti, 2021).

Various studies show that student engagement is influenced by both internal and external factors (Fredricks et al., 2004; Wang & Pan, 2025). One of the external factors that has consistently been shown to have an influence is teacher support (Ertesvåg, 2016; Lam et al., 2016; Skinner & Belmont, 1993). Teacher support describes the extent to which students feel attention, appreciation, academic assistance, emotional support, and the opportunity to actively participate in learning provided by the teacher (Ertesvåg, 2016; Ryan & Deci, 2017). Teachers who are able to foster positive interpersonal relationships create a psychologically safe learning environment that encourages students to participate more actively in classroom activities (Reeve & Cheon, 2021). Longitudinal research has consistently demonstrated that students' perceptions of teacher support are positively associated with behavioral, emotional, and cognitive engagement throughout the learning process (Lam et al., 2016; Tao et al., 2022). Accordingly, teacher support is widely recognized as one of the primary predictors of student engagement (Guo et al., 2023).

Nevertheless, the relationship between teacher support and student engagement does not fully explain the underlying psychological mechanisms through which teacher support influences students' engagement (Guo et al., 2023; Jang et al., 2016). According to Self-Determination Theory (SDT), developed by Ryan and Deci, a supportive learning environment satisfies three fundamental psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2017; Vansteenkiste et al., 2020). The fulfillment of these needs promotes the development of intrinsic motivation, defined as the internal drive to engage in learning because the activity is perceived as interesting, enjoyable, and personally meaningful (Ryan & Deci, 2017). Through this mechanism, teacher support is expected not only to exert a direct influence on student engagement but also to enhance engagement indirectly by fostering students' intrinsic motivation (Guo et al., 2023; Reeve & Cheon, 2021).

Intrinsic motivation has long been recognized as one of the primary determinants of student engagement (Lepper et al., 2005; Ryan & Deci, 2017). Students who learn out of genuine interest, curiosity, and personal satisfaction are more likely to invest greater effort in learning, adopt deeper learning strategies, and persist in the face of academic challenges than those whose learning is driven primarily by external motivation (Deci & Ryan, 2015). A growing body of international research has demonstrated that intrinsic motivation is positively associated with academic engagement and may serve as a mediator in the relationship between school environmental factors and student engagement (Guo et al., 2023; Tao et al., 2022; Tilga et al., 2021). However, most of these studies have been conducted in Western and East Asian countries, limiting the generalizability of their findings to the Indonesian educational context, where collectivistic cultural values and distinctive teacher-student relationships may shape students' motivational processes differently (Aulia & Farida, 2025; Wang et al., 2017).

In Indonesia, research examining the relationship between teacher support and student engagement has predominantly focused on the direct association between these variables, with relatively limited attention given to the psychological mechanisms underlying this relationship (Azizah & Setiawati, 2023; Zariayufa et al., 2021). Previous research has found that the quality of teacher-student relationships is a predictor of academic engagement, but has not explained the psychological mechanisms underlying this relationship (Zariayufa et al., 2021). Other studies also show that teacher social support increases student learning motivation, but have not specifically tested intrinsic motivation as a mediating variable (Aulia & Farida, 2025). In addition, research on the involvement of high school students in Sleman Regency is still relatively limited, even though this region is one of the centers of education in the Special Region of Yogyakarta with characteristics of high academic competition (Badan Pusat Statistik Kabupaten, 2025). This condition indicates a research gap regarding the mechanism of the influence of teacher support on student engagement through intrinsic motivation in the context of Indonesian education (Prananto et al., 2025).

Based on this gap, this study develops a model that positions intrinsic motivation as a mediator in the relationship between teacher support and student engagement. This research model is based on Self-Determination Theory, which explains that teacher support can fulfill students' basic psychological needs, thereby increasing intrinsic motivation, which ultimately encourages student engagement in learning (Lee & Reeve, 2017; Ryan, & Deci, 2017; Vansteenkiste et al., 2020). Testing this model is expected to broaden understanding of the psychological mechanisms underlying student engagement while providing empirical evidence in the context of secondary education in Indonesia (Guo et al., 2023; Reschly & Christenson, 2022).

The novelty of this study lies in testing the mediation model of intrinsic motivation in the relationship between teacher support and student engagement in high school students in Sleman Regency, Yogyakarta Special Region. This differs from previous studies, which generally only tested the direct influence between variables (Lam et al., 2016; Tao et al., 2022), this study explains the psychological process that links teacher support with student engagement based on the Self-Determination Theory perspective (Ryan & Deci, 2017). The research findings are expected to contribute to the development of educational psychology theory and serve as a basis for designing learning strategies that can increase intrinsic motivation and student engagement in secondary schools (Reeve & Cheon, 2021; Vansteenkiste et al., 2020). Based on the description, the purpose of this study is to test the influence of teacher support on student engagement, test the influence of teacher support on intrinsic motivation, test the influence of intrinsic motivation on student engagement, and test the role of intrinsic motivation as a mediator in the relationship between teacher support and high school student engagement in Sleman Regency.

RESEARCH METHOD

This study uses a quantitative approach with a survey design. This quantitative approach was chosen because this study aims to examine the relationship between variables based on numerical data and to test hypotheses formulated through inferential statistical analysis (Creswell, 2014). A survey design was used to explain the causal influence between teacher support as the independent variable, student engagement as the dependent variable, and intrinsic motivation as the mediator

variable. This research model is based on Self-Determination Theory, which explains that teacher support as an environmental factor can fulfill students' basic psychological needs, thereby increasing intrinsic motivation, which in turn encourages student engagement in learning (Ryan & Deci, 2017; Vansteenkiste et al., 2020). Thus, this study aims to test both the direct and indirect influences between variables through mediation analysis so as to provide a more comprehensive understanding of the psychological mechanisms underlying student engagement (Hayes, 2022).

The study population was all senior high school students in Sleman Regency, Yogyakarta Special Region. The sampling technique used was probability sampling with a stratified random sampling approach, so that each member of the population had an equal opportunity to be included in the sample based on predetermined strata (Azwar, 2017; Darwin et al., 2021). The number of research samples was 384 students, which fulfilled the minimum number of samples based on the formula (Krejcie & Morgan, 1970). Participant criteria include: (1) high school students in grades X, XI, or XII in Sleman Regency, (2) registered as active students at the time the research was conducted, and (3) willing to be respondents by providing voluntary consent.

Data collection was conducted using a questionnaire with a five-point Likert scale, ranging from 1 = very inappropriate to 5 = very appropriate. The student engagement variable was measured using a scale developed based on the concept of Fredricks et al. (Fredricks et al., 2004) and Reeve and Tseng (Reeve & Tseng, 2011) which includes dimensions of behavioral engagement, emotional engagement, cognitive engagement, and agentic engagement. The teacher support variable is measured using a scale based on theory Ertesvåg (Ertesvåg, 2016) which includes emotional support, monitoring support, and instructional support. The intrinsic motivation variable is measured using a scale developed based on the Self-Determination Theory of Ryan and Deci (Ryan & Deci, 2017) by adapting relevant intrinsic motivation indicators in the learning context. Before being used in the main research, all instruments underwent content validity testing using expert judgment analyzed using the Aiken's V index. Furthermore, construct validity testing was conducted using Exploratory Factor Analysis (EFA) and reliability testing using the Cronbach's alpha coefficient. All instruments met the validity criteria with a Kaiser-Meyer-Olkin (KMO) value of > 0.50 , significant Bartlett's Test of Sphericity results ($p < 0.05$), and had a Cronbach's alpha reliability coefficient of > 0.70 , making them suitable for use as research measuring instruments (Hair et al., 2022).

Data analysis was performed using Jamovi software version 2.6. The analysis began with descriptive statistics to describe the characteristics of the data, followed by assumption testing, including normality, multicollinearity, and heteroscedasticity tests. The relationship between variables was analyzed using linear regression analysis, while the mediation effect was tested using mediation analysis based on a bootstrapping approach with 5,000 resamplings and a 95% confidence interval. The mediation effect is declared significant if the 95% bootstrap confidence interval does not include zero (Hayes, 2022). All statistical tests used a significance level of $\alpha = 0.05$.

RESULTS AND DISCUSSION

This study involved 384 high school students in Sleman Regency, Yogyakarta Special Region. Data analysis began with descriptive statistics to describe the characteristics of each research variable, followed by regression assumption testing, hypothesis testing, and mediation analysis. A summary of the descriptive statistics is presented in Table 1.

Table 1. Descriptive Statistics of Research Variables

Variables	Min	Max	Mean	SD
Student Engagement	55	151	107	17.7
Teacher Support	30	65	48.6	7.18
Intrinsic Motivation	34	85	60.5	9.45

Based on Table 1, the student engagement variable has an average value of 107.00 (SD = 17.70) with a score range of 55-151. The teacher support variable obtained an average of 48.60 (SD = 7.18) with a score range of 30-65, while intrinsic motivation had an average of 60.50 (SD = 9.45) with a score range of 34-85. In general, the average empirical scores of the three variables were above the hypothetical average, indicating that respondents tended to have relatively high levels of student engagement, perceptions of teacher support, and intrinsic motivation.

Prior to hypothesis testing, the data were examined to ensure that the regression assumptions, including normality, multicollinearity, and heteroscedasticity, were met. The results of the normality test indicated that the residuals were normally distributed, which was also supported by the distribution pattern of the points on the Q-Q Plot graph that followed the diagonal line. The multicollinearity test yielded a tolerance value of 0.520 and a VIF of 1.92, indicating no signs of multicollinearity. Furthermore, the Breusch-Pagan test showed a statistical value of 0.499 with $p = 0.125$, indicating no heteroscedasticity. Thus, all regression assumptions were met, allowing the regression and mediation analysis to proceed.

Table 2. Regression Test Results

Intervariable Influence	Estimate	SE	t	p
Teacher Support → Student Engagement	1,770	0.088	19.94	< .001
Teacher Support → Intrinsic Motivation	0.913	0.048	18.77	< .001
Intrinsic Motivation → Student Engagement	1,410	0.063	23.34	< .001

The results of the regression analysis showed that teacher support had a positive and significant effect on student engagement ($\beta = 1.770$, $t = 19.94$, $p < .001$), with the ability to explain 51.0% of the variation in student engagement ($R^2 = 0.510$). In addition, teacher support also had a positive effect on intrinsic motivation ($\beta = 0.913$, $t = 18.77$, $p < .001$; $R^2 = 0.480$). Furthermore, intrinsic motivation was proven to have a positive and significant effect on student engagement ($\beta = 1.410$, $t = 22.34$, $p < .001$; $R^2 = 0.480$). These results indicate that all direct hypotheses in this study are supported by empirical data.

Table 3. Bootstrapping Mediation Results

Effect	Estimate	SE	Z	p	Mediation Percentage
Indirect Effect	0.849	0.097	8.80	< .001	48.1%
Direct Effect	0.916	0.123	7.45	< .001	51.9%
Total Effect	1,765	0.096	18.34	< .001	100%

The results of the mediation analysis showed that intrinsic motivation had a significant mediating effect on the relationship between teacher support and student engagement. The indirect effect value of 0.849 ($p < .001$) indicates that some of the influence of teacher support on student engagement is channeled through increased intrinsic motivation. Meanwhile, the direct effect remained significant ($\beta = 0.916$, $p < .001$), indicating that intrinsic motivation acts as a partial mediator. In other words, teacher support influences student engagement both directly and indirectly through intrinsic motivation.

The results of the study indicate that teacher support has a positive effect on student engagement. This finding indicates that the higher students' perceptions of teacher support, the higher their level of engagement in the learning process. Teacher support, manifested through attention, appreciation, academic assistance, emotional support, and opportunities for active participation, can create a conducive learning environment, thus encouraging students to be more involved in learning activities. This finding is in line with Self-Determination Theory (SDT), which states that a supportive learning environment can fulfill students' basic psychological needs, namely the need for autonomy, competence, and relatedness, which in turn increases student engagement in learning (Ryan & Deci, 2017; Vansteenkiste et al., 2020). When teachers provide opportunities for students to express their opinions, provide constructive feedback, and show concern for their learning progress, these psychological needs are better met, encouraging students to actively participate in the learning process. The results of this study are consistent with research Skinner and Belmont (1993), Lam et al., (2016), as well as Ertesvåg (2016) which states that teacher support is a key predictor of student engagement. Teachers who are able to build positive interpersonal relationships with students not only increase participation during learning but also foster higher emotional and cognitive engagement. Thus, the findings of this study strengthen empirical evidence that teacher support plays a crucial role in creating learning experiences that enhance student engagement.

In addition to influencing student engagement, this study also shows that teacher support has a positive effect on students' intrinsic motivation. These findings indicate that students who experience attention, appreciation, academic assistance, and emotional support from teachers tend to have an intrinsic drive to learn, such as curiosity, interest in the subject matter, and a desire to master the competencies being learned. According to Self-Determination Theory, intrinsic motivation develops when the social environment supports the fulfillment of needs for autonomy, competence, and relatedness (Ryan & Deci, 2017). Teachers who provide opportunities for students to make decisions in learning, respect students' opinions, and provide challenges that are appropriate to their abilities will increase the perception of competence and autonomy so that intrinsic motivation develops optimally (Reeve & Cheon, 2021; Vansteenkiste et al., 2020). The results of this study are in line with the findings Reeve and Cheon (2021) which shows that autonomy-supportive teacher behavior contributes to increased student intrinsic motivation. Therefore, teacher support serves not only as a source of academic assistance but also as an environmental factor capable of stimulating students' internal learning drive.

This study also found that intrinsic motivation has a positive effect on student engagement. The findings indicate that students who learn driven by interest, curiosity, and personal satisfaction tend to be more active participants in learning, strive diligently to complete assignments, and persist when faced with academic difficulties. These results support the view Ryan & Deci (2017) which states that intrinsic motivation is the most adaptive form of motivation because it encourages individuals to engage in an activity based on the perceived enjoyment and value of the activity. Students who are intrinsically motivated will demonstrate higher behavioral, emotional, and cognitive engagement than students who are solely driven by external motivation. The findings of this study are also consistent with research Fredricks et al., (2004), Henri et al., (2021), and Guo et al., (2023) which shows that intrinsic motivation is an important predictor of academic engagement at various levels of education. Thus, increasing intrinsic motivation is an effective strategy for improving the quality of student engagement during the learning process.

The main findings of this study indicate that intrinsic motivation acts as a partial mediator in the relationship between teacher support and student engagement. This suggests that the influence of teacher support on student engagement occurs through two pathways: directly and indirectly through increased intrinsic motivation. This partial mediation role indicates that while teacher support can directly increase student engagement, some of its influence operates through internal psychological processes, such as the development of intrinsic motivation. These results provide empirical support for Self-Determination Theory, which explains that a supportive social environment will fulfill an individual's basic psychological needs, thus fostering intrinsic motivation, which then produces various positive outcomes, including engagement in learning

(Ryan & Deci, 2017; Vansteenkiste et al., 2020). Thus, intrinsic motivation can be understood as a psychological mechanism that explains how teacher support translates into more active learning behavior. The findings of this study also extend the results of previous research that generally only examined the direct relationship between teacher support and student engagement (Ertesvåg, 2016; Lam et al., 2016), demonstrating that intrinsic motivation plays a crucial role in bridging this relationship. Therefore, efforts to increase student engagement in schools should focus not only on improving the quality of teacher-student interactions, but also on creating a learning environment that fosters intrinsic motivation through autonomy, constructive feedback, emotional support, and meaningful learning experiences.

The findings of this study also contribute to the development of educational psychology literature, particularly regarding the mechanisms explaining the relationship between school environmental factors and student engagement. While most previous research has focused on the direct influence of teacher support on student engagement, this study demonstrates that intrinsic motivation is a psychological mechanism explaining how teacher support can translate into higher learning engagement. By integrating Self-Determination Theory into the research model, these results strengthen the view that contextual and personal factors interact to shape student learning behavior. Therefore, increased student engagement cannot be understood solely through the quality of teacher-student interactions, but also through internal processes that develop in response to a supportive learning environment (Reeve & Cheon, 2021; Ryan & Deci, 2017; Vansteenkiste et al., 2020).

The results of this study also have strong relevance to the context of secondary education in Sleman Regency. As a region with a relatively large number of high schools and high academic competition, students in Sleman are faced with various academic demands that require optimal learning engagement. In these conditions, teachers' roles extend beyond delivering learning materials, to serving as facilitators capable of building positive interpersonal relationships, providing emotional support, and creating meaningful learning experiences. This support becomes increasingly important because it can help students maintain intrinsic motivation amidst various academic demands, thus maintaining high levels of engagement throughout the learning process (Fredricks et al., 2018; Reeve & Cheon, 2021). Practically, the results of this study provide implications for schools and educators in designing learning strategies oriented towards increasing student engagement. Teachers need to develop learning practices that support student autonomy, such as providing opportunities to choose how to complete assignments, involving students in decision-making during learning, and providing feedback that encourages competency development rather than simply evaluating learning outcomes. Furthermore, schools can facilitate training for teachers on learning strategies that support students' psychological needs in accordance with the principles of Self-Determination Theory. Through these efforts, it is hoped that students' intrinsic motivation can develop optimally, thereby impacting increased student engagement and the quality of the learning process on an ongoing basis (Guo et al., 2023; Reeve & Cheon, 2021; Ryan & Deci, 2017).

CONCLUSION

This study aims to examine the role of intrinsic motivation as a mediator in the relationship between teacher support and student engagement in high school students in Sleman Regency, Yogyakarta Special Region. The results showed that teacher support had a positive and significant effect on student engagement and intrinsic motivation. In addition, intrinsic motivation was also shown to have a positive effect on student engagement. The main findings of this study indicate that intrinsic motivation acts as a partial mediator in the relationship between teacher support and student engagement. These results indicate that increased student engagement is not only directly influenced by teacher support, but also through increased intrinsic motivation that develops in response to a supportive learning environment. Thus, this study provides empirical support for Self-Determination Theory, which explains that environmental support can fulfill students' basic psychological needs, thereby encouraging the development of intrinsic motivation and increasing their involvement in the learning process. Theoretically, this study adds to the literature on the

psychological mechanisms linking teacher support to student engagement through the mediating role of intrinsic motivation. Practically, these findings demonstrate the importance of teachers creating learning environments that support students' autonomy, competence, and connectedness to enhance their intrinsic motivation and engagement in learning. Future research is recommended to test this model at different educational levels and regions, using a longitudinal design to more comprehensively examine causal relationships, and considering other variables, such as self-efficacy, classroom climate, psychological well-being, or peer support, as mediators or moderators in explaining student engagement.

ACKNOWLEDGEMENTS

The author would like to express his deepest gratitude to Yogyakarta State University for the academic support provided during the implementation of this research. He also expresses his appreciation to all principals, teachers, and high school students in Sleman Regency, Yogyakarta Special Region, who willingly participated and provided support during the data collection process. Furthermore, he would like to thank all parties who provided assistance, support, and contributions, both directly and indirectly, so that this research could be successfully completed.

REFERENCES

- Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology, 44*(5), 427–445. <https://doi.org/10.1016/j.jsp.2006.04.002>
- Aulia, L. A., & Farida, I. A. (2025). Dukungan sosial guru sebagai prediktor motivasi belajar : Studi pada siswa sekolah menengah. *Proyeksi, 20*(2), 134. <https://doi.org/10.30659/jp.20.2.134-144>
- Azizah, F., & Setiawati, F. A. (2023). The effect of big five personality on student engagement in high school student at Yogyakarta. *Psychological Research and Intervention, 5*(2). <https://doi.org/10.21831/pri.v5i2.52568>
- Azwar, S. (2017). *Metode Penelitian Psikologi: Jilid II*. Pustaka Pelajar.
- Badan Pusat Statistik Kabupaten. (2025). *Jumlah sekolah, guru, dan murid sekolah menengah atas (SMA) di bawah Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi menurut kecamatan di Kabupaten Sleman, 2024/2025*. <https://slemankab.bps.go.id/id/statistics-table/3/YTFsRmNubEhOWE5ZTUZsdWVHOHhMMFpPWm5VMFp6MDkjMw==/number-of-schools--teachers--and-pupils-in-upper-secondary-schools-under-the-ministry-of-education--culture--research--and-technology-by-district-in-sleman-regency--2024.html?year=2024>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Darwin, M., Mamondol, M. R., Sormin, S. A., Nurhayati, Y., Tambunan, H., Sylvia, D., Adnyana, I. M. D. M., Prasetyo, B., Vianitati, P., & Gebang, A. A. (2021). *Metode penelitian pendekatan kuantitatif*. Media Sains Indonesia.
- Deci, E. L., & Ryan, R. M. (2015). Self-Determination Theory. In *International Encyclopedia of the Social & Behavioral Sciences* (pp. 486–491). Elsevier. <https://doi.org/10.1016/B978-0-08-097086-8.26036-4>
- Ertesvåg, S. K. (2016). Students who bully and their perceptions of teacher support and monitoring. *British Educational Research Journal, 42*(5), 826–850. <https://doi.org/10.1002/berj.3240>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research, 74*(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Fredricks, J. A., Hofkens, T., Wang, M., Mortenson, E., & Scott, P. (2018). Supporting girls' and boys' engagement in math and science learning: A mixed methods study. *Journal of Research in Science Teaching, 55*(2), 271–298. <https://doi.org/10.1002/tea.21419>
- Guo, Q., Samsudin, S., Yang, X., Gao, J., Ramlan, M. A., Abdullah, B., & Farizan, N. H. (2023). Relationship between Perceived Teacher Support and Student Engagement in Physical

- Education: A Systematic Review. *Sustainability*, 15(7), 6039. <https://doi.org/10.3390/su15076039>
- Hair, J. F., Hult, G. T., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publishing.
- Hartati, N., & Utomo, S. A. W. (2026). Profil Kompetensi Guru dan Engagement Siswa Berdasarkan Persepsi Guru di SD Negeri Ciwuni 01. *Afeksi: Jurnal Penelitian Dan Evaluasi Pendidikan*, 7(6), 39–50. <https://doi.org/10.59698/afeksi.v7i6.1060>
- Hayes, A. F. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach (3rd ed.)*. Guilford Press.
- Jang, H., Reeve, J., & Halusic, M. (2016). A New Autonomy-Supportive Way of Teaching That Increases Conceptual Learning: Teaching in Students' Preferred Ways. *The Journal of Experimental Education*, 84(4), 686–701. <https://doi.org/10.1080/00220973.2015.1083522>
- Kemendikdasmen. (2022). *Rapor pendidikan Indonesia 2022: Keterlibatan dan motivasi belajar peserta didik SMA*. <https://data.kemendikdasmen.go.id/publikasi/rapor-pendidikan-3>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Kusyanti, R. N. T. (2021). Hubungan Antara Stres Akademik dan Student Engagement Siswa Sekolah Menengah Atas pada Masa Pandemi Covid-19. *Ideguru : Jurnal Karya Ilmiah Guru*, 6(3), 315–320. <https://doi.org/https://doi.org/10.51169/ideguru.v6i3.276>
- Lam, S., Jimerson, S., Shin, H., Cefai, C., Veiga, F. H., Hatzichristou, C., Polychroni, F., Kikas, E., Wong, B. P. H., Stanculescu, E., Basnett, J., Duck, R., Farrell, P., Liu, Y., Negovan, V., Nelson, B., Yang, H., & Zollneritsch, J. (2016). Cultural universality and specificity of student engagement in school: The results of an international study from 12 countries. *British Journal of Educational Psychology*, 86(1), 137–153. <https://doi.org/10.1111/bjep.12079>
- Lee, W., & Reeve, J. (2017). Identifying the neural substrates of intrinsic motivation during task performance. *Cognitive, Affective, & Behavioral Neuroscience*, 17(5), 939–953. <https://doi.org/10.3758/s13415-017-0524-x>
- Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and Extrinsic Motivational Orientations in the Classroom: Age Differences and Academic Correlates. *Journal of Educational Psychology*, 97(2), 184–196. <https://doi.org/10.1037/0022-0663.97.2.184>
- Pascoe, M. C., Hetrick, S. E., Parker, A. G., Pascoe, M. C., Hetrick, S. E., The, A. G. P., & Pascoe, M. C. (2020). The impact of stress on students in secondary school and higher education education. *International Journal of Adolescence and Youth*, 25(1), 104–112. <https://doi.org/10.1080/02673843.2019.1596823>
- Peters, H., Zdravkovic, M., João Costa, M., Celenza, A., Ghias, K., Klamen, D., Mossop, L., Rieder, M., Devi Nadarajah, V., Wangsaturaka, D., Wohlin, M., & Weggemans, M. (2019). Twelve tips for enhancing student engagement. *Medical Teacher*, 41(6), 632–637. <https://doi.org/10.1080/0142159X.2018.1459530>
- Prananto, K., Cahyadi, S., Lubis, F. Y., & Hinduan, Z. R. (2025). Perceived teacher support and student engagement among higher education students – a systematic literature review. *BMC Psychology*. <https://doi.org/10.1186/s40359-025-02412-w>
- Reeve, J., & Cheon, S. H. (2021). Autonomy-supportive teaching : Its malleability , benefits , and potential to improve educational practice. *Educational Psychologist*, 56(1), 54–77. <https://doi.org/10.1080/00461520.2020.1862657>
- Reeve, J., & Tseng, C.-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36(4), 257–267. <https://doi.org/10.1016/j.cedpsych.2011.05.002>
- Reschly, A. L., & Christenson, S. L. (2022). Handbook of Research on Student Engagement: Second Edition. In *Handbook of Research on Student Engagement: Second Edition*. Springer. <https://doi.org/10.1007/978-3-031-07853-8>
- Ryan, R. M., & Deci, E. L. (2017). *Self-Determination Theory: Basic Psychological Needs in*

- Motivation, Development, and Wellness*. Guilford Press.
<https://doi.org/10.1521/978.14625/28806>
- Savitri, J., Rohinsa, M., Wijaya, S., Andamari, S., & Anggraeni, M. T. (2024). Peran teacher support terhadap student engagement melalui basic needs satisfaction pada siswa Sekolah Menengah Atas. *Humanitas (Jurnal Psikologi)*, 7(3), 343–356.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571–581. <https://doi.org/10.1037/0022-0663.85.4.571>
- Tao, Y., Meng, Y., Gao, Z., & Yang, X. (2022). Perceived teacher support, student engagement, and academic achievement: a meta-analysis. *Educational Psychology*, 42(4), 401–420. <https://doi.org/10.1080/01443410.2022.2033168>
- Tilga, H., Kalajas-Tilga, H., Hein, V., Raudsepp, L., & Koka, A. (2021). Effects of a Web-Based Autonomy-Supportive Intervention on Physical Education Teacher Outcomes. *Education Sciences*, 11(7), 316. <https://doi.org/10.3390/educsci11070316>
- Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion*, 44(1), 1–31. <https://doi.org/10.1007/s11031-019-09818-1>
- Wang, F., & Pan, X. (2025). Exploring the association between episodic future thinking and learning engagement under intrinsic motivation mediation and teacher support moderation. *Scientific Reports*, 15(1), 18770. <https://doi.org/10.1038/s41598-025-03894-9>
- Wang, M., Fredricks, J., Ye, F., Hofkens, T., & Linn, J. S. (2019). Conceptualization and Assessment of Adolescents' Engagement and Disengagement in School. *European Journal of Psychological Assessment*, 35(4), 592–606. <https://doi.org/10.1027/1015-5759/a000431>
- Woreta, G. T. (2024). Predictors of academic engagement of high school students: academic socialization and motivational beliefs. *Frontiers in Psychology*, 15(July). <https://doi.org/10.3389/fpsyg.2024.1347163>
- Zariayufa, K., Cahyadi, S., & Witriani, W. (2021). Keterlibatan Siswa Sekolah Menengah Kejuruan dalam Pembelajaran Jarak Jauh dan Dukungan Akademik: Sudut Pandang Guru. *Psikostudia : Jurnal Psikologi*, 10(3), 237. <https://doi.org/10.30872/psikostudia.v10i3.5376>
- Zhao, Y., Zheng, Z., Pan, C., & Zhou, L. (2021). Self-Esteem and Academic Engagement Among Adolescents: A Moderated Mediation Model. *Frontiers in Psychology*, 12(June). <https://doi.org/10.3389/fpsyg.2021.690828>