

Grit and student adjustment in Islamic boarding schools: Peer support as moderator

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ABSTRACT

Previous research has addressed the relationship between grit and student adjustment. However, the understanding of the influence of internal factors on adjustment capacity remains limited. Therefore, this study aimed to analyze whether peer support can moderate the relationship between grit and student adjustment. This study used a correlational quantitative approach. This study used multiple regression with Moderated Regression Analysis (MRA) using JASP 18.3.0. The research sample was 314 students at the Islamic boarding school in Malang, Indonesia. The study's results showed a significant influence of grit on school adjustment, with a p-value of 0.001. Meanwhile, the results of the moderation analysis showed that the peer support significantly moderated the relationship between grit and student adjustment. The value of the negative interaction coefficient indicated that as peer support increases, the relationship between grit and student adjustment actually decreased. The implications of this study suggested that grit plays a significant role in student adjustment in Islamic boarding schools, but this effect weakens as peer support increases, acting as a negative moderator. This research emphasizes the need for a balanced coaching strategy that focuses on strengthening grit and managing peer support to help students adjust optimally.

INTRODUCTION

Student adjustment is an important aspect that supports students' academic success (Purnamasari et al., 2022; Costa dkk., 2018; DeRosier & Lloyd, 2011). One of the abilities that students must have in an Islamic boarding school is to be able to adapt to all new situations at school, including adjusting to academic activities and challenges in Islamic boarding school, social life, interaction with friends, culture, habits, rules, and all life in Islamic boarding school (Rahmadi & Nasution, 2022). Life at an Islamic boarding school differs from that of a regular school because students not only focus on academics but also live full-time in an environment characterized by strict rules, a strong religious culture, and structured daily activities. Students must adapt and participate in various activities at an Islamic boarding school, including prayer schedules, academic activities, communal social life, and strict discipline. Due to the more complex demands of adaptation, the adjustment process at Islamic boarding schools is even more challenging, making academic, social, and institutional adaptability crucial for student success and well-being (Mudzkiyyah et al., 2022; Rahmadi & Nasution, 2022).

Student adjustment is a crucial aspect that provides significant benefits for students, both academically, socially, and psychologically. The ability to adjust helps students improve their

psychological well-being, motivation to learn, and academic achievement (van Rooij et al., 2018; Rajput & Bala, 2023). Adjustment also encourages the development of adaptive learning strategies, such as time management, digital skills, and independent learning, while also helps students manage stress and maintain emotional balance and academic resilience when facing various challenges in the learning process (Dong, et al., 2024). Socially, students who are well adjusted are more likely to build positive relationships with teachers, peers, and the entire school community (Lubis et al., 2022; Monika & Sukma, 2021; Dong et al., 2021). Several previous studies have also confirmed that self-adjustment is a crucial factor in the academic success and psychological well-being of students in Islamic boarding schools (Zheng, 2025; Olasupo et al., 2023). The aspects of student adjustment used in this study are academic adjustment, social adjustment, institutional attachment, and personal emotional adjustment (Baker & Siryk, 1984).

Meanwhile, various problems associated with students' inability to adjust to Islamic boarding schools have negative impacts. Students who fail to adjust tend to experience emotional distress, difficulty following rules, and obstacles in building social relationships with teachers and peers (Rahmadi & Nasution, 2022). This inability to adapt can lead to deviant behavior, academic stress, low learning motivation, anxiety, low self-esteem, social conflict, and feelings of isolation, thus hindering students' academic development and psychological well-being (Yusra, G., 2019; Ghofiniyah & Setiowati, 2017).

This suggests that further research that focuses on student adjustment in Islamic boarding schools is needed. Therefore, research on student adjustment is crucial in encouraging students to adapt and achieve success. Several factors that influence student adjustment include both internal and external factors. Internal factors are grit, self-efficacy, self-concept, self-regulation, and student resilience (Zheng, 2025; Robinson, 2019; Haktanir et al., 2018; Chandel & Singh, 2024; Tasiabe et al., 2024; Hanifah & Diponegoro, 2021). Meanwhile, external factors are social support and parental involvement, (Monika & Sukma, 2021; Azpiazu et al., 2024; Ren & Chen, 2025; Hughes, 2014).

This research focuses on investigating the influence of Grit on students' ability to adjust in pesantren (Islamic Boarding School)-based schools, including both academic challenges and social and emotional adjustments. Grit refers to diligent behavior, consistency, and enthusiasm in achieving expected goals (Garcia & Demetrio, 2017). Grit can be understood through 2 aspects: (1) consistency of interest and (2) perseverance (Duckworth et al., 2007). Students with high grit mean that they do not give up easily when facing difficulties and adapt to the social environment (Hanifah & Diponegoro, 2021; Slick & Lee, 2017). This will encourage consistency in facing challenges to achieve their goals. In the context of self-adjustment in Islamic boarding schools, students must demonstrate perseverance and focus in carrying out all activities, both academic and non-academic, within these institutions.

Likewise, external factors refer to peer support that can support the speed of adaptation (Monika & Sukma, 2021). According to Sarafino (1994) Social support, especially peer support, consists of four aspects. Peer support can go through the following four aspects: (1) emotional support, (2) instrumental support, (3) informational support, and (4) Appreciation support. Peer support refers to the social relationships built between friends that help each other when friends have problems (Lasarte et al., 2020). This support is a form of giving and receiving help between friends, which is based on a sense of shared responsibility and a mutual helping attitude (Zhu et al., 2024; Monika & Sukma, 2021).

Meanwhile, interviews with several teachers and student counsellors revealed that some students who are less able to adjust tend to be quiet, have difficulty learning in the boarding school,

are less able to interact with peers, lack self-confidence, and some even withdraw from the boarding school. Students who are less able to focus and are less diligent in participating in the learning process at the Islamic boarding school. On the other hand, students who have relatively good grit are characterized by patience, perseverance in completing dormitory assignments, and good relationships with their peers (Malang, May 5, 2025). The interview results indicated that students with problems with focus, perseverance, and peer support are also good, but they are less able to adjust to the Islamic boarding school. This means that the problems experienced by students are inconsistent with previous research, as explained in the previous paragraph, which states that grit and peer support impact students' ability to adjust to Islamic boarding schools.

This study highlights how peer support can strengthen the relationship between grit and students' ability to adjust to the Islamic boarding school environment. In Islamic boarding school life, students face many demands—such as living far from family, following strict rules, and adapting to a busy schedule. In situations like these, grit is crucial for students to remain persistent and not give up easily. However, grit alone is not enough; peer support is a crucial social support for students to better adjust (Monika & Sukma, 2021; Rahma et al., 2019). Students who receive emotional and social support from their peers tend to be more enthusiastic and more able to cope with the pressures of boarding school (Muallifah et al., 2024). This support makes them feel accepted and valued, thus increasing their self-confidence and resilience. This aligns with research by Hanifah & Diponegoro (2021), which showed that students with high levels of grit adapt more easily if they also receive support from their social environment, including peers.

Furthermore, social support from peers directly improves adaptability of students in Islamic boarding schools. Peers who help, listen, and motivate each other create a supportive environment (Susanti & Supratiwi, 2024). This support helps resilient students remain consistent in the face of adversity. Pratiwi et al., (2023) also found that the combination of grit, self-efficacy, and social support can reduce academic stress in Islamic school students. This suggests that peers play a crucial role in maintaining students' psychological balance. This finding is reinforced by Suud et al., (2024) who explained that social support not only helps students adapt but can also be a factor that strengthens the positive effects of grit on academic achievement and resilience. Thus, peer support functions as a moderating variable, meaning it strengthens the influence of grit on adjustment. Students who share a high level of grit will demonstrate better adaptation if they have strong social support from their peers. In the context of Islamic boarding schools, close and supportive relationships among students are crucial to help them navigate the adjustment period more smoothly.

The novelty of this study focuses not only on the influence of grit on adjustment but also on how social support from peers strengthens these relationships. This area is rarely researched in the context of Islamic boarding schools, and the results are expected to enrich the study of Islamic educational psychology. This study examines peer support as a moderator of the relationship between grit and student adjustment to an Islamic boarding school. Peer support can strengthen students' grit in adjusting. Students who have good relationships with their peers tend to adjust and interact more easily with their peers. Peer support can strengthen interactions between friends who accept and support each other, encouraging the process of self-adjustment (Zhu et al., 2024). The purpose of this study is to examine the role of peer support in moderating the relationship between grit and student adjustment in Islamic boarding schools. The hypothesis in this study assumes that peer support significantly moderates the relationship between grit and student adjustment in Islamic boarding schools.

METHODS

This study used a quantitative research design with a type of correlational research. Correlation research is a study used to see the influence of *grit* (X) on *student adjustment* (Y) moderated by *peer support* (Z). Based on the literature review above, the hypothesis of this study is that the influence of grit on student adjustment is moderated by peer support. The respondents in this study were junior high school students attending an Islamic boarding school, categorized as integrated, in the city of Malang. The sampling technique used was *stratified random sampling*. The research population was 1.700 with a confidence level of 95% and a margin error of 5%, so the sample size was around 314 students, consisting of 104 (33.12 %) males and 210 (66.88%) females.

Data were collected using three self-report instruments: the Student Adjustment Scale, the Grit Scale, and the Peer Support Scale. All instruments were developed using a scale modification approach, which involved identifying the relevant theoretical frameworks, reviewing existing items, and revising, adding, or removing items to enhance content relevance, cultural appropriateness, and construct representation in accordance with the research context; (Boateng et al., 2018; DeVellis, 2017). The Grit Scale was developed based on Duckworth et al., (2007) conceptualisation of grit, encompassing two dimensions—consistency of interest and perseverance of effort—and consisted of 30 items. The Peer Support Scale was adapted from Sarafino (1994) social support framework and comprised four dimensions: instrumental, informational, emotional, and appraisal support, with a total of 23 items. The Student Adjustment Scale was developed by the researchers based on the model proposed by Baker and Siryk (1984) and included four dimensions: academic, social, institutional, and emotional adjustment, comprising 27 items.

Internal consistency reliability was evaluated using McDonald's omega (ω). The Grit Scale and the Student Adjustment Scale demonstrated good internal consistency ($\omega = .851$), with item–rest correlations ranging from 0.300 to 0.560, indicating acceptable to good item discrimination. The Peer Support Scale demonstrated higher internal consistency ($\omega = .881$), with item–rest correlations ranging from 0.300 to 0.679, indicating good to very good item discrimination. Across all instruments, the removal of any single item did not result in a meaningful increase in reliability coefficients; therefore, all items were retained for subsequent analyses.

Data analysis was conducted using Moderated Regression Analysis (MRA) techniques to examine the relationship between the research variables. In this model, grit acts as an independent variable influencing student adjustment, which is the dependent variable, while peer support serves as a moderator variable that has the potential to strengthen or weaken this relationship. Prior to analysis, the data were tested using classical assumption tests, including normality, linearity, multicollinearity, and homoscedasticity, to ensure the feasibility of the regression model (Hair Jr et al., 2014). MRA analysis was then used to assess the interaction effect between grit and peer support on student adjustment.

RESULTS AND DISCUSSION

Before conducting the hypothesis testing analysis, classical assumption tests were conducted, namely the normality test, linearity test, multicollinearity test. Based on table 1, the results of the classical assumption test are deemed to be passed. The normality value is $0.300 > 0.005$, indicating normality. Meanwhile, the linearity test of the relationship between the independent variable and the dependent variable obtained a p-value of $0.205 > 0.005$ and a peer support with a student adjustment

of $0.107 > 0.005$, indicating linearity. Meanwhile, the Multicollinear test obtained a tolerance value of $0.530 > 0.01$ and a VIF value of $1.885 < 10$, indicating multicollinearity-free. This indicates that the classical assumption test is declared passed.

Table 1*Assumption Test Results*

Assumption Test	Static	p	Tolerance	VIF	Information
Normality	.032	.300 > .05	-	-	Normal
Linearity					
Grit – Student Adjustment		.205 > .05			Linear
Per Support - Student Adjustment		.107 > .05			Linear
Multicollinearity					
Grit			.530 > 0.01	1.885 < 10	Multicollinearity Free
Peer Support			.530 > 0.01	1.885 < 10	Multicollinearity Free

Based on the results of the analysis in tables 2 and 3, it was found that grit has a significant influence on students' self-adjustment ability at school. This is indicated by a significance value of 0.001. In other words, the higher the level of grit of students, the better their ability to adjust to the school environment.

Table 2*F Test Results*

Model		Sum of Squares	df	Mean Square	F	p
H ₁	Regression	12179.099	1	12179.099	113.618	<.001
	Residual	33444.455	312	107.194		
	Total	45623.554	313			

Table 3*R-Square Value*

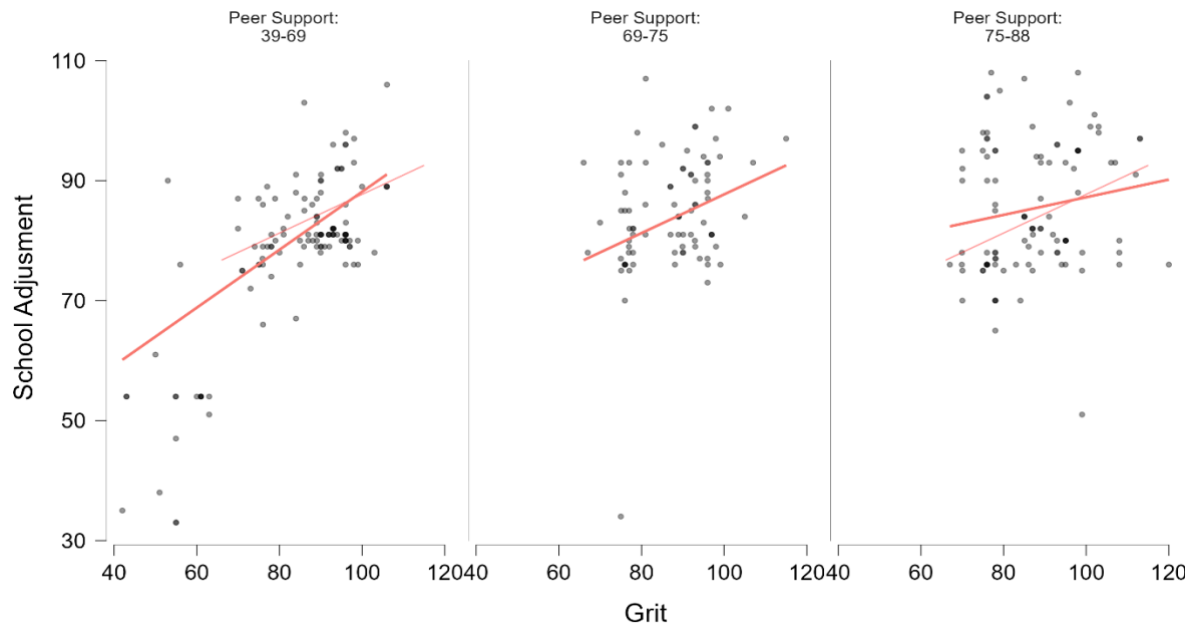
Model	R	R ²	Adjusted R ²	RMSE
H ₁	0.517	0.267	0.265	10.353

Based on Table 2 above, the R-square value is 0.267 or 26.7%. These results show that the role of grit on school adjustment has an effect of 26.7%.

Table 4*Results of the Moderation Regression Test*

Model		Unstandardized	Standard Error	Standardized	t	p
H ₁	(Intercept)	-84.008	19.440		-4.321	<.001
	Grit	1.756	0.253	1.846	6.945	<.001

Peer Support	1.922	0.285	1.384	6.751	<.001
Grit *Peer Support	-0.020	0.004	-2.071	-5.449	<.001

Figure 1*Plot of the Statistical Model*

Hypothesis Testing based on Table 3 and Figure 1 above shows that the interaction between grit and peer support has a significant influence on school adjustment ($\beta = -2.071$, $t = -5.449$, $p = 0.001$). This suggests that peer support plays a negative moderating role in the relationship between grit and school adjustment in students. In other words, when peer support or peer support is high, the influence of grit on school adjustment tends to decrease. In this context, the presence of peer support can mitigate the impact of grit on students' school adjustment.

Table 5*Nilai R-Square*

Model	R	R ²	Adjusted R ²	RMSE
H ₁	0.634	0.402	0.397	9.378

Table 5 shows an R² value of 0.402, indicating that the model that includes *grit*, *peer support*, and interaction between the two explains 40.2% variation in *school adjustment*. In testing the hypothesis, this study used regression analysis, a regression test with Moderated Regression Analysis (MRA). It was found that there was a strong relationship between grit and student adjustment ability in Islamic boarding schools, with the analysis results showing a significance value of 0.001, which is smaller than the standard limit of 0.05. This suggested that the higher the perseverance and persistence (grit) that students possess, the better they will be at adapting to the Islamic boarding schools. The ability to fit in is essential for students, especially in the face of various academic demands, life's differences, and challenges. Thus, self-adjustment is one of the important factors that support

academic success, enthusiasm for learning, and active student involvement in various school activities (van Rooij et al., 2018; Beri & Kaur, 2020).

The results of this study stated that students who have high grit will support the achievement of good self-adjustment (van Rooij et al., 2018). Students who are diligent tend to be stronger in facing various challenges and more focused on adjusting to achieving goals. The results of this study indicated that psychological dynamics influence the relationship between grit and student adjustment. In general, grit reflects persistence and perseverance in the face of long-term challenges. Student grit is described by two main indicators, namely consistency and diligence in achieving goals (Vergara, 2020). It can be observed that students who are consistent with the desired goals focus more on all the efforts made while in the pesantren, including continuing to be consistent in adjusting to all situations in the pesantren (Chandel & Singh, 2024). When students face pressure such as memorizing targets and various tasks that must be completed simultaneously as well as difficulties in completing assignments or challenges at school without adequate social support, grit becomes a key psychological resource that helps them survive and adapt. Students with high grit tend to be more diligent and focused in their efforts to adapt to all conditions at the Islamic boarding school (Chandel & Singh, 2024; Robinson, 2019).

Meanwhile, the moderation regression test revealed a significant interaction between grit and peer support on student adjustment, with $\beta = -2.071$, $t = -5.449$, and $p = 0.001$. These findings suggested that peer support has a negative moderating effect on the relationship between grit and student adjustment. This means that when peer support increases, the influence of grit on self-adjustment in school tends to decrease. In other words, students who receive high support from their peers are less dependent on grit levels to adjust to an Islamic boarding school. In addition, the results showed that the R^2 value was 0.402, indicating that the research model, which involved grit, peer support, and interaction, explained 40.2% of the variation in students' self-adjustment abilities in junior high school.

The results of this study showed that Grit interact significantly with peer support in influencing students' self-adjustment in school (student adjustment). These findings confirmed that grit is an important predictor in helping students cope with various academic and social demands; however, its effectiveness is influenced by the level of peer support those students have. Theoretically, grit as put forward by Duckworth et al., (2007) which combines perseverance (perseverance) and consistency of purpose (consistency of interest) allows individuals to stay afloat in achieving long-term goals despite facing obstacles. In the context of Islamic boarding schools, grit helps students achieve success and adapt to various conditions at the boarding school. Students who possess grit, or a sense of purpose and focus, are more diligent in adhering to the boarding school's rules, learning materials, interacting with friends from diverse cultural backgrounds, and facing various other challenges at the boarding school. Grit helps students develop adaptive coping strategies, increase resilience to academic stress, and maintain commitment to educational goals (Mohan et al., 2021). Grit has been shown to correlate positively with various aspects of self-adjustment, such as learning engagement, self-regulation, emotional control, and social relationships (Hanifah & Diponegoro, 2021; Noronha et al., 2024).

However, the results of negative interactions between grit and peer support showed that when social support from peers was high, the influence of grit on student adjustment actually decreased. These findings are in line with the compensatory model of resilience (Fergus & Zimmerman, 2005), which explains that in the context of resilience, the presence of one protective factor (such as peer support) can reduce an individual's need for another protective factor (such as grit). In this case,

students who receive social-emotional support from peers have sufficient external resources, so they are less dependent on internal forces such as personal fighting power. A specific characteristic inherent in Islamic boarding schools related to peer support is the togetherness built among students. This is usually demonstrated by helping each other complete assignments, sharing meals, and supporting each other's development.

This explanation is reinforced by research results showing that social support from peers not only improves psychological well-being, but also helps to be more resilient, as well as accelerates the process of self-adjustment (Rustham et al., 2022; Mason, 2021). This support allows students to feel safe, accepted, and have a sense of belonging within the school environment. Furthermore, the developmental ecological perspective explains that individual development is influenced by the interaction between personal characteristics and environmental contexts. In this context, grit as a personal factor and peer support as part of the macroenvironment influence each other in shaping students' self-adjustment. When the social environment is supportive, personal forces such as grit become less dominant because the social system has provided enough support. Peer support provided between students in Islamic boarding schools includes informational support, sharing information related to learning progress and difficulties with material when a student is struggling, emotional support, listening to stories when a student is sad, helping students who are experiencing problems, and even sharing food with each other. These various forms of support can improve students' ability to adapt well.

By referring to these theories and empirical findings, it can be concluded that although grit is an important resource in shaping self-adjustment, when peer support is present, the role of grit as the main factor in student adjustment can be shifted. Therefore, psychological interventions in schools need to consider these two aspects simultaneously: strengthening students' internal character, such as grit, while building a supportive social environment through peer mentoring and relationship-building programs among students. This study has several limitations that require further consideration. First, it focused only on two variables: grit as an internal factor and peer support as an external factor influencing student adjustment. Therefore, further research should incorporate other variables that also influence student adjustment, such as family support, school climate, self-efficacy, or emotional regulation. Second, this study was conducted in a specific context, namely, students living in an Islamic boarding school, so the results cannot be generalized to students with different characteristics. Considering these limitations, future research should include more diverse variables, use mixed methods, or implement a longitudinal design to understand the dynamics of adjustment more deeply.

CONCLUSION

This study determined that grit has a significant impact on students' ability to adjust to boarding school. This means that students with high grit tend to be better able to adapt to the school environment. However, when peer support or peer support is high, the influence of grit on self-adjustment actually decreases. This means that students who get a lot of support from friends do not rely too much on grit to adapt.

The practical implications of these findings are significant in promoting the need for schools to help students develop grit through the habituation of perseverance, a focus on goals, and perseverance in the face of challenges. On the other hand, it is also important to build a supportive social environment between students, for example, through cooperation activities and peer mentoring. BK (Guidance and Counselling) teachers are expected to be able to balance strengthening personal

character and social support so that the school adjustment process for students is more optimal. For the next research, exploring several variables related to encouraging and developing student adjustment using a variety of research methods, such as mixed methods or experiments, is recommended.

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