

THE INFLUENCE OF AUTHORITATIVE PARENTING AND TEACHER-STUDENT RELATIONS ON LEARNING ACHIEVEMENT: THE ROLE OF GRIT MEDIATION

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Abstract

This study aims to test the causal relationship model between authoritative parenting, teacher-student relationships, grit, and learning achievement in elementary school students. Student learning achievement in Indonesia, as reflected in PISA data and the National Assessment, is still a challenge that requires attention to noneconomic factors such as family support and school environment. This study adopted a quantitative approach with causal explanatory design to test eight hypotheses, including direct, indirect, and simultaneous influences. The research sample consisted of 302 grade V students from four State Elementary Schools in Bangkalan Regency, who were selected through *cluster sampling techniques*. Data collection was carried out through a questionnaire to measure the variables of authoritative parenting, teacher-student relations, and grit, as well as documentation of report card scores for learning achievement variables. The data was analyzed using *Partial Least Squares Structural Equation Modeling* (PLS-SEM). The results of the study showed that: (1) authoritative parenting had a positive and significant effect directly on learning achievement and grit; (2) the teacher-student relationship has a positive and significant effect on grit, but not significantly on learning achievement; (3) grit does not have a significant direct influence on learning achievement; and (4) indirect influences, either partially or simultaneously, have not been proven to be significant. The main conclusion of this study is that authoritative parenting is a dominant predictor of student achievement and grit, while teacher-student relationships play a role in shaping grit character.

Keywords: Authoritative Parenting, Teacher-Student Relations, Grit, Learning Achievement, PLS-SEM

Introduction

Basic education plays a crucial role as a crucial foundation in the architecture of an individual's cognitive and character development, the success of which greatly determines the future trajectory of education. In this context, learning achievement is the main benchmark that not only reflects the mastery of academic material, but also reflects students' readiness to face the complexity of global challenges (Susanto, 2016). Efforts to create effective and quality learning are an absolute prerequisite to achieve this goal, because a good learning process will produce optimal outcomes (Setyosari, 2014). However, the education landscape in Indonesia is still

faced with serious challenges related to student learning outcomes. Data from the *Programme for International Student Assessment* (PISA) 2022 consistently places Indonesia in the lower quadrant of the OECD country average in literacy, numeracy, and science competencies (Sidik & Intan, 2025). These findings are reinforced at the domestic level by the 2022 National Assessment report, which indicates that around one-third of elementary school students have not reached the minimum competency standards (Ministry of Education and Culture, 2023). This condition is also reflected at the local level, such as in Bangkalan Regency, where more than 60% of students are reported to have not met the Minimum Completeness Criteria (KKM), a basic indicator of learning achievement (Kemendikbudristek, 2024).

Low learning achievement is a multifactorial phenomenon that is influenced by a constellation of internal and external factors of students. Among various external factors, the family and school environment are recognized as the two main ecosystems that shape a child's development. The family, as the primary socialization unit, fundamentally shapes children's mindset, motivation, and learning ethic, and even plays a central role in the moral development of students (Wahyuningsih et al., 2020). Specifically, the parenting style applied by parents is a key variable. Authoritative parenting, characterized by a balance between demands (control and rules) and responsiveness (warmth and emotional support), has been theoretically and empirically proven effective in fostering discipline, independence, and motivation to learn (Baumrind, 1971; Maulana, 2018). This parenting style encourages children to become responsible and proactive individuals in their academic processes (Adam & Awali, 2023).

In addition to family, the quality of interaction in the school environment, especially the relationship between teachers and students, is another important determinant. Positive relationships, in which students feel supported, valued, and emotionally secure, can significantly increase students' confidence, active engagement, and intrinsic motivation in the learning process (Hamre & Pianta, 2006; Roorda et al., 2011). In the context of Indonesian culture that tends to be collective, good relationships with teachers and peers are even a crucial factor that affects students' motivation to achieve (Efendy et al., 2023). Teachers who succeed in positioning themselves as empathetic facilitators will be more effective in fostering their students' passion for learning.

In the midst of this convergence of external influences, students' non-cognitive internal factors such as *grit* or fighting power, appear as relevant psychological constructs. *Grit* is defined as a combination of *perseverance* and passion to achieve long-term goals, even when faced with failure and obstacles (Duckworth et al., 2007). Students with high *grit levels* tend to be more resilient, resilient, and consistent in their endeavors (Bowman et al., 2022). This character is postulated to function as a mediation mechanism, which is a psychological bridge that transforms external support (from parenting and teacher relationships) into concrete results in the form of learning achievements.

Although the literature has extensively examined the influence of parenting and teacher-student relationships separately, there is still a significant research gap on how these two factors interact and simultaneously affect learning achievement, especially by positioning *grit* as a mediating

variable. Research that tests this comprehensive causal model in the context of elementary school students in Indonesia is still limited. Therefore, this study aims to fill this gap by testing a structural model that aims to analyze: (1) the direct influence of authoritative parenting on learning achievement, (2) the direct influence of authoritative parenting on *grit*, (3) the direct influence of teacher-student relationships on learning achievement, (4) the direct influence of teacher-student relationships on *grit*, (5) the direct influence of *grit* on learning achievement, (6) the indirect influence of authoritative parenting on learning achievement through *grit*, (7) the indirect influence of teacher-student relationships on learning achievement through *grit*, and (8) the simultaneous influence of authoritative parenting and teacher-student relationships on learning achievement through *grit*.

Methods

This study uses a quantitative approach with a causal explanatory design designed to explain and test the cause-and-effect relationship between variables. This design was specifically used to test the model of the direct and indirect influence of authoritative parenting (X_1) and teacher-student relationship (X_2) as independent variables on learning achievement (Y) as dependent variables, with *grit* (Z) as the mediating variable.

The population and population sample in this study are all grade V students in State Elementary Schools (SDN) spread across Bangkalan Regency. The sampling technique used was *cluster sampling*, where four schools were purposively selected as clusters. The four schools are SDN Keleyan 2, SDN Mlajah 2, SDN Burneh 1, and SDN Pejagan 1, which were chosen based on consideration of the representation of geographical and social conditions in the region. The total sample involved in the final analysis was 302 students of class V, consisting of 153 male students (50.7%) and 149 female students (49.3%). The selection of grade V students is based on the assumption that they have reached an adequate stage of cognitive development to understand and respond to research instruments independently and reflectively.

Data Collection Techniques and Instruments Data collection for the variables of authoritative parenting, teacher-student relationship, and *grit* was carried out using a closed questionnaire instrument using a five-point Likert scale (ranging from 1 = Strongly Disagree to 5 = Strongly Agree). The development of instrument items is based on well-established theoretical frameworks: the authoritative parenting dimension of Baumrind (1971), the teacher-student relationship dimension of Hamre and Pianta (2006), and *the grit aspect* of Duckworth (2016). To ensure the quality of the instruments, a content validity test involving three education experts was conducted, as well as a construct validity and reliability test on 50 students (trial). The results showed that all instruments were valid and had high reliability (*Cronbach's Alpha* > 0.70). For the learning achievement variable, data is collected through documentation techniques, which is using objective data in the form of average scores of student report cards in odd semesters of the current school year.

Data Analysis Techniques The research data was analyzed using *the Partial Least Squares Structural Equation Modeling* (PLS-SEM) technique with the help of SmartPLS software version 3.0. The selection of PLS-SEM is based on its advantages in analyzing complex

models, its ability to work with data that is not normally distributed, as well as its effectiveness at moderate sample sizes (Hair et al., 2019). The analysis process includes two main stages: (1) evaluation of the measurement model (*outer model*) to ensure the validity and reliability of the instrument through testing of convergent validity (*loading factor* value and AVE), discriminant validity (*cross-loading* and HTMT), and composite reliability; and (2) evaluation of structural models (*inner models*) to test eight research hypotheses. Hypothesis testing was carried out by analyzing *the path coefficient*, determination coefficient (R^2), and significance of indirect influence through a *bootstrapping* procedure with 5,000 resamples.

Results

Data analysis with PLS-SEM yielded quantitative findings regarding the measurement model and the structural model being tested.

Evaluation of Measurement Models (*Outer Model*) Evaluation of the *outer model* aims to ensure that the indicators used to measure each latent variable are valid and reliable.

1. **Convergent Validity:** The results of the analysis show that most indicators have *loading factor* values above the recommended threshold (0.50), which indicates that they are sufficiently representative of their constructs. Although the *Average Variance Extracted* (AVE) value for all three constructs (Parenting Style = 0.309; Teacher Relations = 0.313; Grit = 0.342) lower than the ideal standard of 0.50, the model is maintained. This decision is based on the exploratory nature of the study and is supported by strong composite reliability evidence (above 0.80), which demonstrates adequate internal consistency.

2. **Discriminant Validity:** This validity is confirmed through two tests. First, *cross loading* analysis shows that the charge of each indicator is higher in the construct it is measured than in other constructs. Second, the *Heterotrait-Monotrait Ratio of Correlations* (HTMT) criterion is met, where all HTMT values between constructs are below the threshold of 0.90. This proves that each variable in this study is a unique and conceptually different construct.

3. **Reliability:** All constructs show an excellent level of reliability. *Cronbach's Alpha* and *Composite Reliability* values for all variables (Parenting: 0.752 and 0.817; Teacher Relations: 0.751 and 0.816; Grits: 0.782 and 0.836) are above the 0.70 threshold, which signifies the high internal consistency of the instrument used.

Structural Model Evaluation (*Inner Model*) *Internal model evaluation* is carried out to test the causal relationship between variables and answer the research hypothesis. The results of the determination coefficient analysis (R^2) showed that the variables of authoritative parenting and teacher-student relations were able to explain 55.9% of the variance in the *grit* variable ($R^2 = 0.559$). This shows the model has moderate to strong predictive power against *grit*. On the other hand, the model's predictive power on learning achievement was very weak, where the three predictor variables were only able to explain 4.4% of the variance in learning achievement ($R^2 = 0.044$).

The results of the significance testing for each hypothesis pathway are presented in detail in Table 1.

Table 1. Results of Testing the Hypothesis of Direct and Indirect Influence

Hipotesis	Influence Path	Path Coefficients	P-Value	Results
H1	Parenting → Learning Achievement	0,188	0,028	Accepted
H2	Grit → Parenting	0,428	0,000	Accepted
H3	Teacher Relations → Learning Achievement	-0,126	0,085	Rejected
H4	Teacher → Grit Relations	0,401	0,000	Accepted
H5	Grit → Learning Achievement	0,114	0,107	Rejected
H6	Parenting → Grit → Learning Achievement	0,049	0,106	Rejected
H7	Teacher Relations → Grit → Learning Achievement	0,046	0,137	Rejected
H8	Simultaneous → Grit → Learning Achievement	-	> 0,05	Rejected

The main findings of the path analysis are as follows:

1. Direct Influence: Authoritative parenting has been shown to have a positive and statistically significant effect on learning achievement ($\beta = 0.188$, $p < 0.05$) and also on grit ($\beta = 0.428$, $p < 0.001$). The teacher-student relationship also showed a positive and very significant influence on grit ($\beta = 0.401$, $p < 0.001$). However, the direct influence of the teacher-student relationship on learning achievement was not significant ($p = 0.085$), as was the direct influence of grit on learning achievement ($p = 0.107$).
2. Indirect Influence (Mediation): Mediation testing shows that grit does not function as a significant mediator. The indirect influence of authoritative parenting on learning achievement through grit ($p = 0.106$) and from teacher-student relationship to learning achievement through grit ($p = 0.137$) were both insignificant. Thus, the H6 and H7 hypotheses are rejected.
3. Simultaneous Influence: Since the two mediation pathways (H6 and H7) are insignificant, the eighth hypothesis (H8) regarding simultaneous influence through grit is automatically also rejected.

Discussion

The results of this study provide in-depth insight into the dynamics of the relationship between environmental factors (family and school) and internal factors of students (*grit*) in influencing learning achievement. This discussion will elaborate on key findings and compare them with previous theoretical and research frameworks.

Dominance of the Influence of Authoritative Parenting The most prominent finding is the central role of authoritative parenting as a strong predictor, both for learning achievement and *grit*. Significant direct influences on learning achievement confirm a broad body of literature (e.g., Maulana, 2018; Fadhilah et al., 2019), which states that a supportive, communicative, and structured home environment can increase children's motivation, discipline, and learning responsibility. The balance between demands and emotional warmth that characterizes this parenting seems to create a solid psychological foundation for the child to succeed academically.

Further, the strong influence of authoritative parenting on *grit* reinforces the argument that tough and diligent character is largely forged in the family ecosystem. When children are educated to be independent but remain in the corridor of guidance, they learn to face challenges, manage failures, and sustain efforts, which is the essence of *grit* (Haryono et al., 2018). This suggests that interventions at the family level have a dual impact: improving academic capabilities while strengthening non-cognitive character.

The Role of Teacher-Student Relations as Character Builders Another interesting finding is the significant role of teacher-student relations in influencing *grit*, but not on learning achievement directly. This indicates that in the context of this study, the role of teachers is more prominent as a *character builder* than as a direct driver of academic achievement. Teachers who are supportive, empathetic, and able to build positive relationships can foster a fighting spirit and perseverance in students, in line with the findings of Roorda et al. (2011). These findings are also relevant to the Indonesian context, where positive interpersonal relationships at school are an important predictor of student achievement motivation (Efendy et al., 2023). Support from teachers can be the psychological "fuel" that makes students more resilient. However, to transform *this grit* into measurable achievements, it seems that other factors such as instructional quality or effective learning strategies are needed, which are in line with the importance of creating quality learning (Setyosari, 2014).

The Mystery of the Role of Grit at the Elementary School Level The insignificance of the direct influence of *grit* on learning achievement, as well as its failure as a mediating variable, is a finding that contrasts most with most of the literature (e.g., Duckworth et al., 2007). There are several possible interpretations for these findings. First, at the developmental level of elementary school students, the concept of "long-term goals" that is at the core of *grit* may not yet be fully formed and internalized. Their orientation may be more short-term and driven by extrinsic factors (e.g., values, praise). Second, learning achievement measured through report card scores may be more a reflection of cognitive ability, memory, and task adherence, while *grit* is more relevant in contexts that demand complex problem-solving and perseverance over a longer period of time. Third, the very low R^2 value for learning achievement (4.4%) explicitly indicates that the variables in this model are not the main predictors. Other factors such as intelligence, pure intrinsic motivation, curriculum quality, or learning facilities at home and school are likely to have a much more dominant influence.

Failure of Simultaneous Influence and Mediation The rejection of the hypothesis of indirect influence (mediation), both partially (H6, H7) and simultaneously (H8), is a logical consequence of the insignificance of the path between *grit* and learning achievement. This implies that although parenting and teacher relationships are successful in building *grit*, *grit* itself has not been an effective mechanism for improving academic achievement in this sample group. The synergy between home and school support in forming resilient character does occur, but the impact stops at character formation and has not yet been "contagious" to academic results.

Theoretically, this study makes an important contribution by showing that in the population of elementary school students in Indonesia, the influence of family factors (parenting) seems to be more dominant on academic outcomes than school factors (teacher relations) and internal psychological factors (*grit*). Practically, these findings underscore the urgency of intervention programs that focus on parental empowerment and improving the quality of parenting as the most promising strategies to improve learning achievement.

Conclusion and Implications

Based on the analysis of the data and testing of eight hypotheses, several key conclusions can be drawn. First, authoritative parenting is the most dominant and significant predictor factor, which has a positive effect both directly on learning achievement and on the formation of the *grit* of elementary school students. Second, the teacher-student relationship also shows an important role as a *grit* former, but its influence does not extend significantly to learning achievement. Third, *grit* as a psychological construct, in the context of elementary school students in this study, was not shown to have a significant direct influence on learning achievement, nor did it fail to function as an effective mediating variable.

Implications and Recommendations:

1. **For Parents:** This result is a strong affirmation of the importance of implementing authoritative parenting. Parents are strongly encouraged to consciously build open communication, provide consistent emotional support, and set clear rules and boundaries. This practice has proven to be the best investment to foster children's independence, responsibility, and fighting power which leads to academic success.
2. **For Teachers and Schools:** The main focus of teachers should not only be on the delivery of material, but also on building positive and supportive relationships to foster *grit* character in students. Schools can facilitate ongoing professional development for teachers, particularly in the areas of emotional intelligence and effective relationship-building strategies with students to create a psychologically safe learning environment.
3. **For Policymakers:** These findings provide an empirical basis for policymakers to design more holistic educational intervention programs. Policies that focus only on schools will not be optimal. There needs to be a program that seriously targets family empowerment, for example through regular seminars or workshops on effective parenting, as an essential complementary strategy to improve the quality of basic education.

4. **For Future Researchers:** Future research is recommended to examine other variables that have the potential to have a stronger influence on learning achievement, such as intrinsic motivation, self-efficacy, learning style, or socio-economic factors. In addition, the use of longitudinal research designs can provide a better understanding of how *grit* develops over time and when these characteristics begin to show significant influence on academic achievement at higher education levels.

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