Proceedings Series of Educational Studies

International Conference of Research Innovation and Technology on Elementary Education II 2025

The Influence of Parental Involvement on the Academic Achievement of Elementary School Students

Nurlyta Bintang Aura[1], Santy Dinar Permata[2]

[1,2]Elementary and Preschool Education, State University of Malang, East Java, Indonesia

*Corresponding author, email: nurlyta.bintang.2301516@students.um.ac.id

Keywords
Student
Achievement
Parental Involvement

Abstract
Students are initially required to learn in various things, including in the academic field, students academic achievement in elementary school are a fairly important foundation for the next level of education. Various factors are believed to influence academic achievement, with parental support and involvement playing an important role in improving students academic achievement. Therefore, this research is motivated by the importance of a deep understanding of how parental support influences students' academic achievement, even more so for those who have shown excellence in this field. This study aims to analyze the influence between parental involvement with school (X1) and parental support for children directly (X2) on the academic achievement of outstanding elementary school students (Y) using quantitative as the type of the research. The target population of this study is 16 students who are in the 3rd grade of JAC School students in Surabaya City. Sampling was carried out using random sampling techniques, and data was collected using questionnaires obtained from teachers and students concerned. Data analysis used multiple linear regression tests. The results of this study indicate that there is a strong influence between parental involvement on student academic achievement, it is hoped that this study can provide an empirical contribution to understanding the multidimensional role of parental support in improving the academic achievement of high-achieving students, so that parents can increase their support/involvement to students and provide practical implications for efforts to improve the quality of education and parental involvement in elementary schools.

1. Introduction

Academic achievement, a blend of "academic" and "achievement," generally refers to an individual's success in the scientific or educational domain (Maryati et al., 2020). It often manifests as quantifiable learning outcomes such as grades, course scores, or exam results. Elementary school is a foundational period for a student's cognitive, social, and emotional development (Rose et al., 2018). The academic achievements attained by students at this level are crucial, reflecting their success in primary education and serving as a vital indicator for their progress in subsequent educational stages. While academic excellence is a cornerstone concept in education, a universally accepted definition remains elusive. This is due to the diverse perspectives, benchmarks, and evaluation standards employed by experts (Tahar, 2023).

Many of the factors that contribute to academic achievement come from within and outside the students, internal factors that come from within the students (such as learning motivation, interests, and cognitive abilities), and external factors that come from the surrounding environment (such as the quality of teaching, school facilities, and social support) (Steinmayr et al., 2019). Among these external factors, parental participation is believed to have a significant influence on their children's academic development (Newman et al., 2019). The potential in students is invested in experience and converted into knowledge, that is, crystallized intelligence that will improve student achievement. In the process of transforming this potential, the informal factor (family) plays an important role (Asnawi et al., 2023).

Parental involvement in children's education is not only limited to meeting material needs and school fees. Moreover, parental involvement includes various forms of active participation in the child's learning process, both at home and at school (Padmadewi et al., 2018). This form of involvement can be in the form of helping children learn at home, communicating regularly with the school about child development, attending school activities, and volunteering in various school programs. Parental support, as another dimension of parental participation, also plays an important role in shaping students' motivation and confidence. Emotional support, such as providing encouragement, praise, and attention to a child's learning process, can increase their confidence

and perseverance in the face of academic challenges (Hall et al., 2019). In addition, instrumental support, such as RTI provides adequate learning facilities at home and assists children in overcoming learning difficulties, and also contributes significantly to their academic achievement (Ruhyana & Aeni, 2019). Students who excel academically often show distinctive characteristics, such as high learning motivation, good independent learning skills, and perseverance in facing

academic tasks (Tahan, 2023). However, it is important to understand that the achievements they achieve are inseparable from the role of the environment around them, including the support and active involvement of parents (Shimi et al., 2024). Parents of high-achieving learners may have different patterns of interaction and support compared to parents of learners with different levels of achievement.

While the role of parents in education is well-researched, much of the existing literature tends to generalize the needs of all students. Consequently, a significant gap exists in our understanding of the support dynamics for high-achieving students. This research aims to fill this gap in three ways. First, we examine whether the type of parental involvement that is effective for high-achieving students differs whether they benefit more from parental involvement with the school (X1) or from direct academic support at home (X2). Second, this study empirically tests the 'ceiling effect' assumption, questioning whether increased parental involvement still yields a significant impact for students who are already academically excelling. Third, by focusing on the context of a private school in Surabaya, this research tests the relevance of existing parental involvement models within the unique socio-cultural context of Indonesia, an area that remains underexplored. Thus, this study not only highlights the importance of the parental role but also provides more nuanced insights into how parents can effectively sustain and enhance their children's academic excellence.

This study aims to fill this gap by quantitatively analyzing the correlation between parental involvement with school and parental support for children directly on the academic achievement of outstanding elementary school students. Through a multiple linear regression approach, this study will simultaneously and partially examine the influence of the two independent variables (parental involvement with the school and parental direct support) on the dependent variable (academic achievement of outstanding students). The focus of this study on students who have demonstrated good academic achievement can be seen on the report card each semester based on the assumption that it is in this group that the role of parental support and involvement may be a significant differentiating factor. By identifying patterns of parental support and involvement that are positively correlated with high academic achievement, this study is expected to provide a model or good practice that other parents can imitate to improve their children's academic achievement.

This research will be carried out at JAC School Surabaya, involving grade 3 students. Sampling will be carried out by random sampling technique, with the main criteria being students who have evidence of significant academic achievement in one or several subjects. Data on parental involvement with the school and direct parental support will be collected through a specially designed questionnaire and filled out by the teachers and/or the student's parents. Academic achievement data will be obtained from school academic records or report cards.

The results of this study are expected to make a significant empirical contribution to the understanding of the multidimensional role of parental support in improving the academic achievement of outstanding students at the elementary school level. In addition, the findings of this study are expected to provide practical implications for efforts to improve the quality of education in elementary schools, especially in terms of parental involvement as an important partner in the educational process. With a better understanding of the correlation between parental support and engagement and academic achievement, it is hoped that parents will be more motivated and have clearer guidance on effective ways to support their children's academic success.

2. Method

This Study uses a quantitative approach with a focus on the influences between variables and data analysis with the multiple linear regression method. The multiple linear regression analysis describes the line of best fit for the relationship between Y (dependent variable) and (independent variable) (Kumari & Yadav, 2028). The purpose of this study was to identify the extent

to which parental involvement affects student's academic achievement, This study involved grade 3 elementary school students at JAC School Surabaya. The selection of grade 3 is based on the consideration that at this level, students have had sufficient learning experience to show relatively stable and measurable academic achievement. Based on the available data, 16 3rd grade students at JAC School Surabaya are the target population of this study. All students in this population were included as a research sample, so this study used a census approach. Participation in this study is voluntary and requires the consent of the student's parents.

The data in this study was collected using two types of instruments:

2.1. Parental Involvement and Support Questionnaire (Variable X)

This questionnaire is used to measure the level of parental involvement with the school (X1) and parental support in the child directly (X2). The questionnaire consists of two parts:

2.1.1. Parental Involvement and Support Questionnaire (X1)

Consists of 5 questions that measure the frequency of parental involvement in teaching and learning activities, attendance at school meetings/events, school communication regarding student development, special programs/activities involving parents, and teachers' views on parental involvement in student academics. The questionnaire is filled out by the teacher.

2.1.2. Direct Parental Support to Children (X2)

Consists of 5 questions that measure the frequency with which parents help students in doing homework/studying, communication between parents and students about school and academic achievement, providing motivation and emotional support, providing a conducive learning environment at home, and the impact of parental support on student motivation and achievement. The questionnaire is filled out by the students.

2.2. Academic Achievement Documentation (Variable Y)

Data on the academic achievement of students (Y) was obtained from the teacher's answers to 5 questions related to students' academic achievement in elementary school, the contribution of parental support to students' academic achievement according to teachers, the significance of students' academic achievements whose parents were involved, student achievement in elementary school, and teachers' strategies to improve students' academic achievement. A complementary document to measure this dimension is the student's report card. Just like the questionnaire, the answers to these questions use a numerical scale (with a range of 1-100).

The collected data was analyzed using the *Statistical Package for the Social Sciences* (SPSS) program. For each learner, the total score for variable X1 (Parental Involvement with School) was calculated by summing the answers to questions 1 to 5 on the X1 questionnaire. The total score for variable X2 (Parent Support for Children Directly) is calculated in the same way for questions 1 through 5 on the X2 section of the questionnaire. The total score for variable Y (Student Academic Achievement) was calculated by summing the answers to questions 1 to 5 on the Y part of the questionnaire. The interpretation of the results of the regression analysis will focus on the value of the regression coefficient to determine the direction and magnitude of the correlation between each independent variable and academic achievement, the significance value (p-value) to determine whether the correlation is statistically significant, and the R2 value (R-squared) to determine the proportion of variance in academic achievement that can be explained by the two independent variables together.

3. Results and Discussion

Table 1. Questionnaire Results

No	Name	X1	X2	Y	No
1.	Z	97,4	93,4	96	1.
2.	N	96,4	91,2	93	2.
3.	C	97,4	93,8	96	3.
4.	R	96,4	91,2	92,6	4.
5.	D	96	88,8	91	5.
6.	Darr	97,4	93	96	6.
7.	I	96,4	90,2	93	7.
8.	J	96,4	89,4	92	8.
9.	Cher	96	88,4	91	9.
10.	S	96,4	89,8	92	10.
11.	Cla	97,4	93,4	94,6	11.
12.	K	96,4	90,2	92	12.
13.	B	96,4	90,8	92,6	13.
14.	Joy	96	88,4	91	14.
15.	Rak	96,4	90,4	92	15.
16.	F	96,4	91,4	93	16.

Once the data were collected, a series of prerequisite statistical tests were performed. The initial procedure was a normality test to ensure the data met the assumptions for regression analysis. Based on the criteria outlined by Imam Ghozali (2011:161), normality is indicated when the data points on the plot align with the diagonal line.

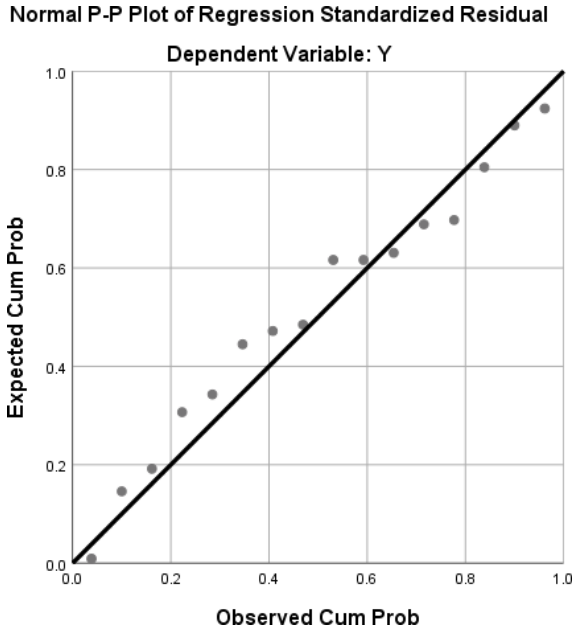

Figure 1. Result of Normality Test

Having established the normality of the regression residuals as depicted in Figure 1, a test for multicollinearity was performed. The criteria for this test, as outlined by Imam Ghozali (2011: 107-108), require a tolerance value > 0.100 and a Variance Inflation Factor (VIF) value < 10.00 to indicate no significant multicollinearity.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-134.091	46.766		-2.867	.013		
	X1	1.977	.647	.583	3.056	.009	.113	8.866
	X2	.397	.188	.404	2.116	.054	.113	8.866

Figure 2. Result of Multicollinearity Test

Having established the absence of multicollinearity (Figure 2), a test for heteroskedasticity was conducted. According to Imam Ghozali (2011:139), the model is considered homoscedastic (i.e. no heteroskedasticity) when a visual inspection of its scatterplot reveals no clear patterns and the data points are randomly scattered above and below the zero line on the Y-axis.

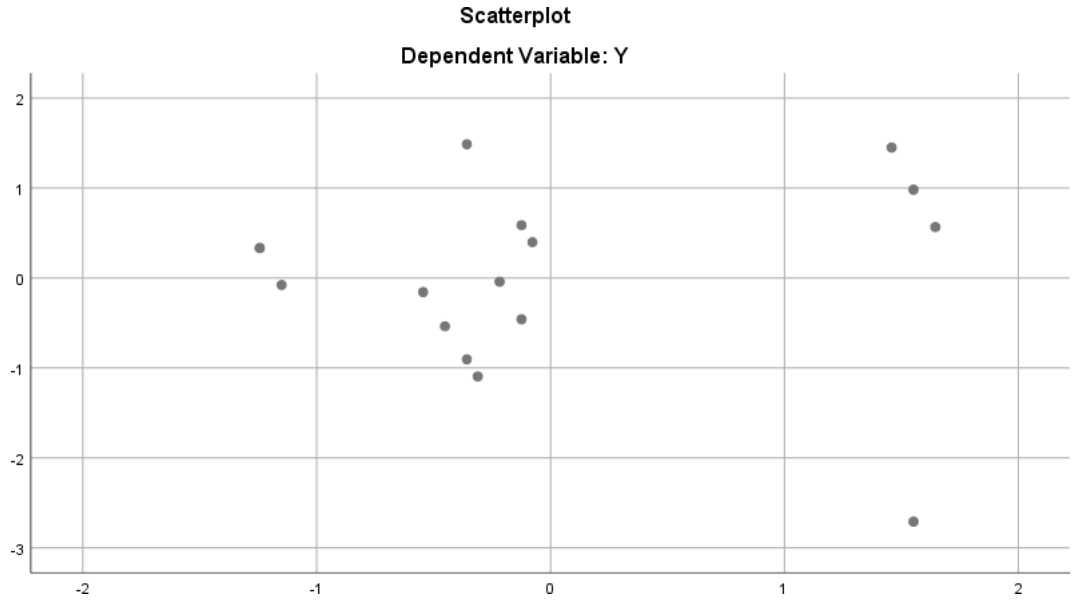

Figure 3. Result of Heteroskedasticity Test

After confirming that the model was homoscedastic (Figure 3), the data were tested for autocorrelation. The decision rule for this test, according to Imam Ghozali (2011: 111), is based on the Durbin-Watson (d) statistic. The absence of autocorrelation is established if the value of d satisfies the condition $dU < d < 4 - dU$.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.973[a]	.947	.938	.4341	1.254

Figure 4. Result of Autocorrelation Test

The Durbin-Watson test was used to check for autocorrelation. For a significance level of 5% with 2 independent variables (k=2) and 16 observations (N=16), the upper critical value (dU) from the statistical table is 1.539. The model's Durbin-Watson statistic was 1.254 (Figure 4). Since this value does not fall within the required range for no autocorrelation

(1.539<d<2.461), the test indicated the presence of autocorrelation. The analysis then proceeded to the partial t-tests to evaluate each independent variable's individual effect, where, according to Imam Ghozali (2011: 101), a significance value (Sig.) of less than 0.05 indicates a significant partial effect.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-134.091	46.766		-2.867	.013		
	X1	1.977	.647	.583	3.056	.009	.113	8.866
	X2	.397	.188	.404	2.116	.054	.113	8.866

Figure 5. Result of Partial T Test

Analysis of the individual coefficients via the partial t-test (**Figure 5**) indicated that only Variable X1 exerted a statistically significant unique influence on Variable Y (p = .009). The effect of Variable X2 was not statistically significant (p = .054). Subsequently, the overall significance of the regression model was assessed with a simultaneous F-test. The F-test determines if the independent variables, taken together, significantly affect the dependent variable, which is confirmed by a Sig. value < 0.05 (Imam Ghozali, 2011:101). However, variable X2 has no effect on variable Y. It is important to consider this non-significant finding in light of the study's limited statistical power due to the small sample size.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.428	2	21.714	115.232	.000[b]
	Residual	2.450	13	.188		
	Total	45.878	15			

Figure 6. Result of Simultaneous F Test

Finally, the F-test result (F = 115.232, p < .001), detailed in Figure 6, provides strong evidence to reject the null hypothesis. This confirms that the independent variables X1 and X2, jointly, exert a statistically significant influence on the dependent variable Y.

The results of this study revealed that there was a variation in the level of parental involvement and support for students at JAC School Surabaya, which was reflected in the range of scores obtained from the questionnaire. Nonetheless, in general, the level of parental involvement with the school and the parent's direct support of the child was at a fairly high level, as indicated by the high average of scores for both independent variables. These findings indicate that most parents at JAC School Surabaya show awareness of the importance of their role in their children's education.

Parental involvement with the school, which includes participation in teaching and learning activities, attendance at school meetings, communication with the school, and involvement in school programs, seems to be an important aspect of the educational dynamics at JAC School Surabaya. Teachers in the study reported a fairly active level of parental involvement, which is in line with previous research that emphasized the importance of partnerships between parents and schools in creating a supportive learning environment. This involvement not only provides direct support to students, but also creates a positive sense of community and care in the school

environment.

An intriguing finding of this study is the non-significant effect of Direct Parental Support (X2) on academic achievement (p = .054), especially when contrasted with the significant impact of Parental Involvement with School (X1). Several potential explanations could account for this result. First, the sample consists of high-achieving students , who are often characterized by greater academic independence. These students may require less direct homework assistance and benefit more from the broader resources and strategic partnerships facilitated by their parents' involvement with the school (X1). Second, there may be a 'ceiling effect' for the direct support measured. The parents of high-achieving students likely already provide a consistently high level of support at home, leading to low variance in the X2 data and making it difficult to detect a statistically significant effect. Furthermore, in the context of a high-performing institution like JAC School, parents might perceive their primary role as collaborators with the school (X1) rather than direct academic interveners (X2). Finally, it is crucial to consider this finding in light of the study's limited statistical power. The p-value of .054 is marginal, and it is plausible that a larger sample size could have detected a significant effect, suggesting that direct support may still be important, albeit perhaps less impactful than school-based involvement for this particular group.

Parental involvement in children's education can be understood through a comprehensive framework proposed by Joyce Epstein. This Framework identifies six main types of involvement that contribute to students success. Epstein's Model of Parental Involvement outlines six key strategies that schools can use to foster collaboration with families and improve student outcomes. These include supporting parenting by helping families create nurturing home environments, promoting clear communication between home and school, encouraging volunteering at school functions, helping parents support learning at home through homework and educational activities, including families in school decisions via committees and councils, and building partnerships with community organizations to support students. Each element centers the student and emphasizes the shared responsibility of families, schools, and communities in a child's education. The model is often used to guide school practices and policies aimed at strengthening home-school connections.

Parental support for children directly, which includes assistance in doing assignments, communication about school, motivation, and providing a conducive learning environment at home, has also been shown to play an important role in shaping students learning experiences. Teachers observed that this support was positively correlated with students' motivation and academic achievement. These findings reinforce the idea that a supportive home environment, where parents are actively involved in a child's learning process, can be a significant protective factor against academic challenges and improve student learning outcomes.

The correlation analysis conducted in this study provides empirical evidence regarding the relationship between parental involvement and support and students' academic achievement. Although the direction and strength of the correlation may vary between individuals, these findings overall support the hypothesis that the higher the level of parental involvement and support, the higher the academic achievement of students. This is in line with theories of child development that emphasize the importance of a rich and supportive environment in facilitating cognitive and academic development.

However, it is important to note that the study also found variation in the level of academic achievement of learners, even though most students showed good achievement. This variation can be influenced by a variety of other factors beyond parental involvement and support, such as internal factors of the student (e.g., intrinsic motivation, ability to learn) and other external factors (e.g., quality of teaching in the classroom, school facilities). Therefore, future research needs to consider these other factors to gain a more comprehensive understanding of the determinants of academic achievement.

The practical implications of these findings are the importance of encouraging and facilitating parental involvement and support in their children's education. Schools can play an active role in creating programs and activities that engage parents, provide resources and

training for parents to support learning at home, and build effective communication between teachers and parents. Parents, in turn, need to be aware of the importance of their role and strive to be actively involved in their children's education.

This study has several limitations, such as a relatively small sample size and a focus on one specific school. Therefore, generalization of findings needs to be done carefully. Future research may expand the sample size and involve other schools to improve the external validity of the findings. In addition, longitudinal research can be conducted to understand how parental involvement and support affect students' academic development over time.

4. Conclusion

This study aims to analyze the correlation between parental involvement with school (X1) and parental support for children directly (X2) on the academic achievement of elementary school students at JAC School Surabaya. The results showed that parental involvement and support levels tended to be high, and regression analysis revealed a significant positive correlation between these two independent variables and student academic achievement. These findings confirm the importance of the active role of parents in their children's education, both through participation in school activities and through direct support at home. This perspective aligns with Joyce Epstein's theory of parental involvement, which highlights the diverse ways families can collaborate with schools and support their children's learning within the educational ecosystem.

Although this study provides strong evidence of the relationship between parental involvement and support and academic achievement, it is important to recognize that variation in student achievement is also influenced by other factors. Therefore, future research is recommended to consider additional factors such as individual student characteristics, teaching quality, and the overall school environment. In addition, given the limitations of this study in terms of sample size and geographic coverage, follow-up research with a larger sample and a more diverse context will strengthen the generalization of the findings and provide a more comprehensive understanding of the dynamics of parental involvement and academic achievement.

Author Contributions

All authors have equal contributions to the paper. All the authors have read and approved the final manuscript.

Funding

No funding support was received.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Acknowledgement

The authors extend their sincere gratitude to JAC School Surabaya for their participation and support in this research. Special appreciation is also conveyed to the teachers and 3rd-grade students who willingly dedicated their time to complete questionnaires and provide the much needed data. Furthermore, we express our profound thanks to the supervising lecturer for invaluable guidance, support, and encouragement in the completion of this article, enabling its presentation at an international seminar.

References

Asnawi, A., Rakhmat, C., & Sidik, G. S. (2023). Peran guru dalam menemukan dan mengembangkan potensi kecerdasan peserta didik di sekolah dasar. Jurnal Educatiio, 9(2), 1089-1099. https://doi.org/10.31949/educatio.v9i2.5017

Hall, J., Sammons, P., Smees, R., Sylva, K., Evangelou, M., Goff, J., & Smith, G. (2019). Relationships between families' use of sure start children's centres, changes in home learning environments, and preschool behavioural disorders. *Oxford Review of Education, 45*(3), 367-389. https://doi.org/10.1080/03054985.2018.1551195

Kumari, K & Yadav S. (2018). Linear regression analysis study. *Journal of the Practice of Cardiovascular Sciences, 4*(1), 33-36. https://doi.org/10.4103/jpcs.jpcs_8_18

Maryati, L. I., Affandi, G. R., & Affandi, R. (2020). Prestasi akademik siswa sekolah dasar tingkat awal (kesiapan sekolah dasar dan motivasi berprestasi). UMSIDA PRESS.

Newman, N., Northcutt, A., Farmer, A., & Black, B. (2019). Epstein's model of parental ınvolvement: parent perceptions in urban schools. *Language Teaching and Educational Research (LATER), 2*(2), 81-100. https://doi.org/10.35207/later.559732

Padmadewi, N. N., Artini, L. P., Nitiasih, P. K., & Suandana, I. W. (2018). Memberdayakan keterlibatan orang tua dalam pemberdayaan literasi di sekolah dasar. *Jurnal Ilmu Sosial dan Humaniora, 7*(1), 64-76. https://doi.org/10.23887/jish-undiksha.v7i1.13049

Ruhyana, N. F & Aeni, A. N. (2019). Effect of educational facilities and infrastructure in primary schools on students' learning outcomes. *Mimbar Sekolah Dasar, 6*(1), 43-54. http://dx.doi.org/10.17509/mimbar-sd.v6i1.1522

Rose, E., Lehrl, S., Ebert, S., & Weinert, S. (2018). Long-term relations between children's language, the home literacy environment, and socioemotional development from ages 3 to 8. *Early Education and Development, 29*(3), 342–356. https://doi.org/10.1080/10409289.2017.1409096

Shimi, R. A., Azmi, N. B. M., Ganesh, L. D., Subramaniam, D., Vignasveran, Y., Moganaselvan. P. A., & Rajamogan, V. (2024). The impact of parental involvement in student's academic performance. *International Journal of Academic Research in Business & Social Sciences, 14*(1), 2063-2070. http://dx.doi.org/10.6007/IJARBSS/v14-i1/19891

Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019). The importance of students' motivation for their academic achievement - replicating and extending previous findings. *Frontiers in Psychology, 10*(1), 1-11. https://doi.org/10.3389/fpsyg.2019.01730

Tahar, M. (2023). Characteristics of children who excel academically and mechanism for caring for them. *Psychology and education, 60*(2), 2514-2624.