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Differences in students' academic achievement based on the level of parental involvement at SDI Ash-Sholihah

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ABSTRACT

This study examines differences in students' academic achievement based on levels of parental involvement at SDI Ash-Sholihah Gedung Johor. A quantitative comparative design was employed with a sample of 84 students selected from a population of 540 using the Slovin formula (10% error rate). Data were collected through validated and reliable questionnaires measuring parental involvement and academic achievement, and analyzed using descriptive statistics, one-way ANOVA, and Tukey HSD tests. The findings revealed that mean academic achievement differed significantly across parental involvement levels: low (61.46), medium (66.86), and high (74.39). The ANOVA test indicated a statistically significant difference (F = 44.795; p less than 0.05), and post hoc analysis confirmed that students with high parental involvement achieved significantly higher scores than those in medium and low groups. These results demonstrate that parental involvement is a crucial external factor influencing academic success. The study highlights the importance of strengthening school–family collaboration to enhance learning outcomes, particularly in Islamic elementary school contexts. The findings contribute empirical evidence supporting educational policies and practices that actively engage parents as partners in students' academic development.

Keyword: parental involvement; academic achievement; comparative quantitative research; SDI Ash-Sholihah

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1. INTRODUCTION

Primary education is a crucial foundation for developing students' character and academic abilities. Islamic elementary schools, as Islamic educational institutions focused on developing spiritual and academic values, play an essential role in shaping a young generation with noble character and high achievement. From an Islamic perspective, education holds a high status, as stated in Surah Al-Mujadalah, verse 11, which emphasizes that Allah SWT will elevate those who are given knowledge (Arum Sari & Retnaningsih, 2022). However, many parents still do not understand the importance of their involvement in their children's education (Fanreza & Pasaribu, 2016).

Academic achievement in primary education is a crucial indicator for measuring the success of the education system (York et al., 2021). This achievement not only reflects students' success in mastering subject matter but also indicates the effectiveness of learning, the quality of teaching, and the support of a positive learning environment at school and at home (Wickramasinghe & Aragon Valles, 2024). Research reveals that student academic achievement is influenced by many factors, including learning motivation, teacher competence, family support, and school infrastructure. External factors, such as parental involvement, may play an even more dominant role than internal factors in determining student academic success (Abdurahman & Atikah, 2020).

Parental involvement encompasses various forms of support, such as communication with the school, learning assistance, provision of educational facilities, and participation in school activities (Epstein, 2018). According to Epstein's theory, parental involvement creates a bridge between home and school, strengthening children's motivation to learn. Research by Castro et al. (2020) in the *Review of Educational Research* revealed

that intensive and high-quality parental involvement contributes to improved academic grades, attendance, and positive behavior at school. Similar findings were also presented by Anjani and Mashudi (2024), who found that parental participation has a significant impact on children's academic achievement. Research by Nisa (2022) confirmed that students are strongly influenced by parental participation and interest in education, which are key indicators of academic success. Furthermore, Andrian and AR (2021) explained that parental involvement significantly and positively influences student academic achievement, where parental understanding, acceptance, attention, and support are crucial for a child's academic success.

In Indonesia's education sector, collaboration between parents and schools remains essential. According to Sri Mulyani, parents and schools need to work together to educate children. Up to 80% of parents never participate in decision-making at school, and up to 30% never discuss their children's learning with teachers. She added that one inexpensive yet powerful strategy to increase the effectiveness of the education system is parental involvement.

Academic achievement is the result of a student's learning process, characterized by increased knowledge in understanding and solving problems through synthesis and analysis (Retnowati et al., 2020). According to Bloom, as cited in Suharsimi (2022), academic achievement encompasses three aspects: cognitive (the ability to remember, apply, analyze, and evaluate), affective (attitudes and values), and psychomotor (skills learned after acquiring knowledge). Academic achievement is influenced by internal factors such as intelligence, interests, talents, and motivation, as well as external factors including the role of the family, school conditions, and the community environment (Hawadi, 2019). Research by Pasaribu (2019) shows that self-efficacy and learning independence significantly influence achievement, with students who have high confidence in their abilities tending to be more resilient when facing academic difficulties.

Academic achievement serves several important functions in the educational context. According to Arifin (2020), academic achievement serves as: (1) an indicator of the quality and quantity of knowledge mastered by students; (2) a driver for increasing knowledge; (3) feedback for improving the quality of education; (4) an internal and external indicator for educational institutions; and (5) an indicator of student intelligence. Thus, academic achievement not only reflects individual student performance but also serves as a benchmark for the effectiveness of the education system as a whole.

Based on the explanation above and preliminary field observations, significant differences in academic achievement were found among students with varying levels of parental involvement. Students who receive active support from their parents tend to have higher learning motivation and better academic results.

Although numerous studies have examined the relationship between parental involvement and academic achievement, most previous research has focused on general elementary school contexts and correlational approaches. Limited studies have specifically categorized parental involvement into different levels (low, medium, and high) and analyzed comparative differences using ANOVA and Tukey HSD in Islamic elementary school settings. Furthermore, there is still a lack of empirical evidence explaining how variations in parental involvement levels may lead to significant differences in academic outcomes within the context of Islamic-based education in Medan. Therefore, this study seeks to fill this gap by providing a comparative quantitative analysis of academic achievement based on levels of parental involvement.

2. RESEARCH METHOD

This study employed a comparative quantitative research design to examine differences in academic achievement based on levels of parental involvement. The study involved 84 students from SDI Ash-Sholihah Gedung Johor, selected using the Slovin formula (e = 10%) from a population of 540 students (Sugiyono, 2019). The sample was divided into three categories—low, medium, and high parental involvement (n = 28 per group). The categorization was determined based on score interval classifications derived from total questionnaire scores.

Data were collected using two Likert-scale questionnaires (4-point scale): a parental involvement instrument (21 items, $\alpha = 0.86$) and an academic achievement instrument (20 items, $\alpha = 0.90$), both of which were tested for validity and reliability (Arikunto, 2022; Azwar, 2020). Data analysis included descriptive statistics, prerequisite assumption tests (Shapiro–Wilk normality test and Levene's test of homogeneity), one-way ANOVA, and Tukey HSD post hoc analysis at a significance level of $\alpha = 0.05$ (Siregar, 2020).

Prior to data collection, official permission was obtained from the school authorities, and respondents' confidentiality was maintained throughout the research process.

3. RESULTS AND DISCUSSION

A. Descriptive Statistical Analysis

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
X_{total}	84	52	75	64.02	6.669	44.481
Y_{total}	84	48	82	67.57	7.360	54.176
Valid N (listwise)	84					

Based on the descriptive analysis results, variable X has a minimum value of 52 and a maximum value of 75, with a mean of 64.02 and a standard deviation of 6.669. The relatively smaller standard deviation compared to the mean indicates that the distribution of X_{total} data is fairly homogeneous and does not show extreme deviations.

Variable Y has a minimum value of 48 and a maximum value of 82, with a mean of 67.57 and a standard deviation of 7.360. These results indicate that respondents generally show a relatively high level of scores for variable Y, with data variation still within acceptable limits for further statistical analysis.

Table 2. Report Y_{total}

X_{total} (Binned)	Mean	N	Std. Deviation
1	61.46	28	5.000
2	66.86	28	5.414
3	74.39	28	4.977
Total	67.57	84	7.360

The differences in mean Y_{total} values among groups indicate variation in the level of variable Y based on the X_{total} category. The low group shows the lowest mean score, followed by the medium group, while the high group demonstrates the highest mean value. This pattern is also visually reflected in the bar chart of mean Y_{total} by X_{total} group, which clearly illustrates the upward trend across categories.

Overall, the descriptive statistical results indicate that the data exhibit adequate distribution, relatively stable variation, and clear mean differences among groups. These findings provide a strong foundation for subsequent inferential statistical analyses to further examine differences or relationships between variables.

B. Validity and Reliability Test of Instrument X

Validity and reliability tests were conducted to ensure that the instrument used to measure variable X accurately and consistently reflects the intended construct. Instrument validity indicates the extent to which each item represents the variable being measured, while reliability reflects the level of internal consistency of the instrument.

Table 3. Item-Total Statistics Variable X

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X1	60.88	40.564	.462	.860
X2	60.81	40.903	.401	.862
X3	60.88	40.925	.413	.862
X4	60.83	40.647	.428	.861
X5	60.89	39.470	.539	.857
X6	60.83	40.020	.476	.859
X7	60.74	40.388	.460	.860
X8	60.89	41.326	.337	.864
X9	60.87	39.730	.496	.859
X10	60.77	40.755	.459	.860
X11	60.73	40.008	.488	.859
X12	60.77	40.539	.452	.860
X13	60.80	40.163	.512	.858
X14	60.85	40.132	.520	.858
X15	60.89	39.494	.520	.858
X16	60.76	40.184	.495	.859
X17	60.79	41.592	.318	.865
X18	60.76	41.147	.400	.862
X19	60.92	40.511	.491	.859
X20	60.79	40.050	.503	.858

Based on the validity test results using the Corrected Item–Total Correlation analysis, all statement items in the X variable instrument have correlation values exceeding the minimum required threshold of 0.30. The obtained values range from 0.318 to 0.539. This indicates that each item (X1–X20) has a sufficiently strong relationship with the total score of variable X; therefore, all items are considered valid and appropriate for research use.

C. Validity and Reliability Test of Instrument Y

The validity and reliability tests for the Y variable instrument were conducted to ensure that each statement item accurately and consistently measures the intended construct. This test used the Corrected Item–Total Correlation method for item validity and Cronbach's Alpha for overall reliability.

Table 4. Item-Total Statistics Variable Y

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Y1	64.31	47.397	.802	.888
Y2	64.31	47.397	.802	.888
Y3	64.33	50.273	.364	.899
Y4	64.31	47.397	.802	.888
Y5	64.42	49.186	.519	.895
Y6	64.31	47.397	.802	.888
Y7	64.42	50.583	.403	.898
Y8	64.42	49.186	.519	.895
Y9	64.42	49.282	.433	.898
Y10	64.23	51.478	.304	.900
Y11	64.29	51.243	.304	.900
Y12	64.32	50.245	.405	.898
Y13	64.44	51.237	.302	.900
Y14	64.38	50.721	.369	.899
Y15	64.43	50.465	.375	.899
Y16	64.33	47.526	.800	.888
Y17	64.42	50.848	.303	.901
Y18	64.33	47.526	.800	.888
Y19	64.35	49.313	.489	.896
Y20	64.35	50.879	.352	.899
Y21	64.33	47.526	.800	.888

Based on the analysis results, all 21 items of the Y variable instrument met the validity criteria, as their correlation values exceeded the minimum threshold. Thus, it can be concluded that the instrument satisfies both validity and reliability requirements and is suitable for further statistical analysis.

D. Normality Test

Table 5. Tests of Normality

X_Total (Binned)		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Y_Total	1	.177	28	.024	.954	28	.255
	2	.134	28	.200*	.947	28	.165
	3	.159	28	.069	.927	28	.053

. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The Shapiro–Wilk test results show significance values of 0.255 for group 1, 0.165 for group 2, and 0.053 for group 3. Since all significance values are greater than 0.05, it can be concluded that the Y_{total} data in all three groups are normally distributed. Therefore, the normality assumption has been satisfied, and the data are appropriate for parametric statistical analysis in the subsequent stage.

E. Homogeneity Test

Table 6. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Y_Total	Based on Mean	.687	2	81	.506
	Based on Median	.466	2	81	.629
	Based on Median and with adjusted df	.466	2	78.512	.629
	Based on trimmed mean	.698	2	81	.500

Based on the results of Levene's test, the significance value based on the mean is 0.506. Since this value is greater than 0.05, it can be concluded that the variance of Y_Total across groups is homogeneous. Therefore, the homogeneity assumption has been satisfied, and the data meet the requirements for parametric statistical analysis in the next stage.

F. ANOVA Test

Table 7. ANOVA Test

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2361.500	2	1180.750	44.795	.000
Within Groups	2135.071	81	26.359		

	Sum of Squares	Df	Mean Square	F	Sig.
Total	4496.571	83			

Based on the ANOVA results, the calculated F value is 44.795 with a significance value of 0.000. Since $p < 0.05$, the null hypothesis (H_0) is rejected. This indicates that there is a statistically significant difference in the mean Y_Total scores among the three X_Total groups.

Thus, it can be concluded that the level of X_Total has a significant effect on Y_Total. These findings demonstrate that differences in X_Total categories (low, medium, and high) significantly contribute to variations in Y_Total values. Therefore, the analysis was continued using a post hoc test to determine which specific group pairs differed significantly.

Table 8. Post Hoc Test (Tukey HSD)

(I) X_Total (Binned)	(J) X_Total (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
1	2	-5.393*	1.372	.001	-8.67	-2.12
	3	-12.929*	1.372	.000	-16.20	-9.65
2	1	5.393*	1.372	.001	2.12	8.67
	3	-7.536*	1.372	.000	-10.81	-4.26
3	1	12.929*	1.372	.000	9.65	16.20
	2	7.536*	1.372	.000	4.26	10.81

*. The mean difference is significant at the 0.05 level.

The Tukey HSD test results indicate that all pairwise comparisons show significance values below 0.05, meaning that each group differs significantly from the others. Specifically:

- The low group differs significantly from the medium and high groups.
- The medium group differs significantly from the low and high groups.
- The high group differs significantly from both the low and medium groups.

Therefore, it can be concluded that differences in mean scores among parental involvement levels are statistically significant and did not occur by chance.

G. Implications of Analysis Results

The statistical analysis revealed significant differences in student academic achievement based on levels of parental involvement at SDI Ash-Sholihah Gedung Johor. This finding has important implications for understanding the role of parental involvement in supporting students' academic performance, particularly in primary education contexts.

The primary implication is that higher levels of parental involvement are associated with higher student academic achievement. Students with strong parental support tend to demonstrate higher motivation, better discipline, and stronger academic responsibility, which ultimately contribute to improved learning outcomes.

Furthermore, this study highlights the importance of parental involvement in creating a supportive learning environment at home. Effective communication between parents and teachers, learning assistance, and participation in school activities can strengthen the synergy between family and school environments. This synergy plays a crucial role in sustaining parental engagement in children's education.

Another implication is that schools should design structured and targeted programs that actively involve parents in the educational process. Such involvement should extend beyond administrative participation and include support for students' academic and character development. In this context, parental involvement becomes an integral component of efforts to enhance educational quality.

Overall, these findings suggest that parental involvement is a key factor that should be considered in strategies aimed at improving students' academic achievement at SDI Ash-Sholihah Gedung Johor. The results may serve as a reference for policymakers, educators, and families in developing more effective educational practices and collaborative learning environments.

4. CONCLUSION

This study demonstrates that there are significant differences in students' academic achievement based on levels of parental involvement at SDI Ash-Sholihah Gedung Johor. The ANOVA results yielded an F value of 44.795 with a significance level of $p = 0.000$ ($p < 0.05$), indicating statistically significant differences in academic achievement among the groups. The Tukey HSD post hoc test further confirmed that students with a high level of parental involvement achieved a mean score of 74.39, which was significantly higher than that of

the medium group (66.86) and the low group (61.46). These findings confirm that parental involvement plays a crucial role in enhancing students' academic achievement at the elementary education level.

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