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The Parental Impact on Education: Understanding the Correlation between the Parental Involvement and Academic Results

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Abstract:
Introduction: Extensively researched in the realm of education, the involvement of parents in their offspring's academic performance has been the subject of increased attention. This article aims to examine the impact of parental contribution on their children's scholastic accomplishments, concentrating on the statistical correlation between the two.
Methods: This study used qualitative and quantitative methods to examine the association between parents' involvement and academic results.
Results: Results show that parental involvement boosts academic performance.
Discussion: Understanding the impact of parental education on children's academic performance is essential for educators, policymakers, and families alike, as it highlights the importance of fostering an educationally rich environment for children to thrive.
Limitations: The data of this study were collected from a survey of 356 parents from different schools in Saudi Arabia in 2023.
Conclusions: The study's findings show that parental involvement positively impacts students' academic outcomes by 42.1%.

Key words: parental involvement, academic results, education, statistical correlation.

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Introduction

Parents play a crucial role in their children's success in school. Research has demonstrated that parental involvement can completely impact a child's academic performance, which includes their grades, test scores, and overall school performance (Grolnick & Slowiaczek, 1994; Hill & Taylor, 2004; Jeynes, 2005). Parents can indirectly encourage their children- upon their age- with many educational activities: help with homework, support extracurricular activities, attend parent-teacher conferences, volunteer at school, drive them to school, etc. Parental involvement is seen as a shared responsibility among families, schools, and communities (Çayak, 2021). This is because it depends on a wide variety of individual and contextual factors, such as the child's socio-economic status (SES), cultural background, gender, and age (Hoover & Sandler, 1995; Epstein, 2018; Fan & Chen, 2001).

This article discusses the statistical correlation between parental involvement and academic achievement. In today's highly competitive environment, education has evolved from being a luxury to an absolute necessity for every youngster (Coutts et al., 2014). Parental participation improves academic performance, attendance, behavior, and school attitudes (Hoover & Sandler, 1995; Epstein, 2018; Fan & Chen, 2001). Nevertheless, the degree and type of influence have been the subject of much investigation and discussion in recent times (Bradley & Corwyn, 2002). The education level of parents plays a crucial role in shaping the academic journey of their children. It serves as a significant indicator of the educational environment and support available within the household. When parents possess a higher level of education, it tends to positively influence their children's studies and grades. This influence can be attributed to several factors, including the transfer of knowledge and skills, enhanced learning opportunities, increased educational aspirations, and a supportive home environment (Coutts et al., 2014). Parents with higher levels of education often have a deeper understanding of academic concepts and possess the ability to provide educational guidance and support. They can assist their children in comprehending complex subjects, developing effective study strategies, and navigating academic challenges. The transfer of knowledge from parents to children can create a solid foundation for learning, enabling children to excel in their studies and achieve higher grades. Research consistently suggests a strong correlation between parental education and children's academic achievement.

Moreover, parents with higher education levels tend to value education and prioritize their children's academic success. They may have experienced the benefits of education firsthand and recognize its significance in securing better opportunities and enhancing overall quality of life. As a result, these parents often have higher educational aspirations for their children and actively engage in activities that promote learning. They may encourage their children to

participate in extracurricular activities, enroll them in enrichment programs, and provide access to educational resources, such as books, computers, and educational websites. These enriched learning opportunities can contribute to improved academic performance and higher grades (Hoover & Sandler, 1995).
However, it is important to note that the impact of parental education on children's studies and grades is not solely determined by formal educational attainment. Even parents without high levels of education can positively impact their children's academic performance through their attitudes, values, ethics, morals, and involvement in their education. A supportive and nurturing home environment, coupled with a belief in the value of education, can have a significant impact on a child's educational journey.

1 Literature review

This section divides parental involvement into three stages: Early Childhood Education, Elementary and Middle School, and High School. Regardless of the parents' level of education, their involvement in the child's journey depends on the age. It is important to stress the fact that the child's age plays a significant factor in the research.

1.1 Early Childhood Education

Early parental involvement is crucial for a child's academic development, particularly during their initial years of schooling. Studies demonstrate that parental involvement in early education leads to improvements in children's school readiness, cognitive development, language abilities, and social competence (Fan & Chen, 2001). For example, Rimm-Kaufman et al. (2003) found that preschool activities like reading, educational games, and museum visits correlated positively with children's literacy, numeracy skills, and readiness for kindergarten.
In addition, early parental involvement in education can help alleviate the adverse effects of poverty and low SES on children's academic performance (Kronick, 2003). Several analyses have demonstrated that children from low-income households who received substantial parental involvement proved better academic outcomes than those who did not (Bradley & Corwyn, 2002; Rouse & Barrow, 2006). Hong (2005) discovered that when controlling the socioeconomic status, kindergarteners with more involved parents had higher test scores in math and reading.

1.2 Elementary and middle school

During elementary and middle school, paternal participation remains beneficial to children's academic performance, but the nature and extent of the involvement that is effective may differ from those in early childhood education. According to

research, participation in homework, reading, and communication with teachers is particularly crucial for academic achievement during these stages (Jeynes, 2005; Grolnick & Slowiaczek, 1994; Hoover & Sandler, 1995). Jeynes (2005) found that parental involvement in middle school boosted motivation, attendance span, and academic success.

Researchers Garbacz et al. (2015) discovered that parental engagement in homework had a greater impact on boys' mathematical ability than on girls' performance. This is because boys are more likely to graduate from high school than girls.

1.3 High school

During high school, parental involvement remains essential in children's performance, though the type and extent of involvement may differ from earlier stages of education. Research suggests that parental participation in academic planning, college readiness, and career guidance are crucial for adolescents' success (Rimm-Kaufman et al., 2003). Dietric and Salmela-Aro (2013) found that involving parents in academic planning, such as course selection and progress tracking, can lead to improved results, motivation, and goal setting for secondary students. Similarly, Jeynes (2005) discovered that students' goals, attendance, and persistence in higher education were all enhanced when their parents were included in the college preparation process.

Parental involvement in college planning has been found to have a greater beneficial effect on Latino students' college attendance and enrollment than on white students, according to research conducted by Halle et al. (1997).

2 Methodology

A growing body of research has linked parental involvement to higher academic performance, although researchers disagree on what forms of involvement are most beneficial. Some research has linked parental involvement to better academic outcomes for children, while others have found the relationship to be more nuanced and conditional on other factors (Jeynes, 2005; Grolnick & Slowiaczek, 1994).

In this statistical analysis, the amount of parental participation functioned as the investigation's independent variable, and the parental participation scale, which was established, was utilized to determine the level of parental involvement. The scale gauged parental involvement in various areas, such as monitoring the child's progress, communication with school, and attending parent-teacher conferences. The parents' education level is positively correlated with their children's results. It is important to stress the importance of the level of education of parents. It plays a crucial role in the education system. The

student's GPA was the primary statistic collected for this study because it served as the dependent variable.

This study utilized a quantitative research method and selected 356 parents from various schools in Saudi Arabia using a self-report questionnaire. To assess parental involvement and academic performance, the study asked about family contributions to their children's education. The survey was administered to a statistically significant sample of the population of the country of Saudi Arabia.

2.1 Data Collection

The data were collected using survey forms which were distributed among the parents of the children. The survey form asked parents for information about the current academic performance of their child. It also asked about the parents' level of education. The parental involvement scale, as the name suggests, makes it very easy to answer questions in simple YES or NO. There was a total of 10 questions targeted towards parents in this matter. As per the table below, the responses numbered N=356, the mean (average) of all responses along with the gender, and education level of parents, all considered the independent variables. The dependent variable is the child's result.

Table 1

Descriptive statistics of data

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Gender	356	1.0	2.0	1.562	.4969
Child's Current Enrollment	356	1.0	3.0	2.129	.7801
Child' Result	356	1.0	5.0	1.806	1.1575
Parental_Participation1	356	1.0	2.0	1.143	.3508
Parental_Participation2	356	1.0	2.0	1.303	.4604
Parental_Participation3	356	1.0	2.0	1.045	.2075
Parental_Participation4	356	1.0	2.0	1.303	.4604
Parental_Participation5	356	1.0	2.0	1.528	.4999
Parental_Participation6	356	1.0	2.0	1.110	.3128
Parental_Participation7	356	1.0	2.0	1.135	.3420
Parental_Participation8	356	1.0	2.0	1.081	.2739
Parental_Participation9	356	1.0	2.0	1.390	.4885
Parental_Participation10	356	1.0	2.0	1.511	.5006
Parents' Education	356	1.0	3.0	2.559	.7388

The distribution of the Child's Results illustrates the performance range among the 356 cases. The majority of students fall within the" A" grade category (90-100%), accounting for 194 cases (54.6%). Additionally, 100 cases (28.1%) fall within the "B" grade range (80-90%), while smaller percentages are distributed across lower results grades: 21 cases (5.9%) in the "C" range (70-80%), 19 cases

(5.3%) in the "D" range (60-70%), and 22 cases (6.2%) in the "F" range (less than 60%).
The dependent variable of our study is the GPA score (Child's Result) and the independent variables are a total of ten questions wrapping up the parental involvement ranging from helping children with homework to being part of the parents' association and attending meetings at school.

2.2 Statistical analysis

Statistical techniques involving Multivariate Analysis of Variance (MANOVA) (Smith, 2020), Pearson-correlation tests, cross-tabulation methods, and regression analysis, were used in SPSS to analyze the data to give insight relationship between dependent and independent variables.

Hypothesis One: There is no significant impact of parental involvement on children's academic performance.
Hypothesis Two: There is a significant impact of parental involvement on children's academic performance.

One of the key findings from the data is the parents' level of education which can give us an insight into how they affect a child's performance through cross-tabulation techniques.

Table 2

Child'result vs parents' education cross-tabulation

			Parents' Education			Total
			Higher Education	Undergraduate	Graduate	
Child' Result	A/ 90-100%	Count	35	9	150	194
		% within Child's Result	18.0%	4.6%	77.3%	100.0%
	B/ 80- 90%	Count	14	3	83	100
		% within Child's Result	14.0%	3.0%	83.0%	100.0%
	C/ 70- 80%	Count	2	4	15	21
		% within Child' Result	9.5%	19.0%	71.4%	100.0%
	D/ 60- 70%	Count	1	15	3	19
		% within Child's Result	5.3%	78.9%	15.8%	100.0%
	F/ 50- 60%	Count	1	20	1	22
		% within Child's Result	4.5%	90.9%	4.5%	100.0%
Total		Count	53	51	252	356
		% within Child's Result	14.9%	14.3%	70.8%	100.0%

It is observed that a higher percentage of cases with parents having Graduate education are present across all performance categories. This suggests a potential correlation between parents' education level and their child's academic performance, with a notable trend of higher academic achievement among

children whose parents have Graduate education. However, further statistical analysis is needed to validate the relationship's significance and uncover potential contributing factors.

2.2.1 Manova

MANOVA is studied to interpret the effects of multiple variables on the dependent variable which in this study is Child's Results.

Table 3

MANOVA findings

	Type III Sum of Squares	*df*	*Mean Square*	*F*	*Sig. p-values*
Corrected Model	200.423[a]	10	20.042	25.125	.000
Intercept	232.555	1	232.555	291.535	.000
Are you attending the Parents Teachers Conference upon the req	27.648	1	27.648	34.660	.000
Is your child dependent on you for the daily studies at home	3.944	1	3.944	4.944	.027
Are you following up with the school upon receiving the Report C	.003	1	.003	.004	.951
Is your child registered for extracurricular activities	1.167	1	1.167	1.463	.227
Does your child participate often in summer camps	.000	1	.000	.000	.988
Are you making sure that your child is always punctual to attend	31.306	1	31.306	39.245	.000
Are you supporting your child in creating projects	1.268	1	1.268	1.589	.208
Are you always in contact with the school via phone email	13.120	1	13.120	16.447	.000
Are you a member of the Parents Association	7.808	1	7.808	9.789	.002
Are you discussing at home with your child about the career path	.638	1	.638	.800	.372
Error	275.204	345	.798		
Total	1637.000	356			
Corrected Total	475.626	355			

a. R Squared = .421 (Adjusted R Squared = .405)

The analysis in the table above shows that some of the independent variables have a significant impact on the children's education. The importance of each independent variable's influence on the dependent variable is shown by the p-values, in the last column. The variables with p-values less than 0.05 indicate a statistically significant impact on the child's academic result. The "Corrected Model" explains a sizable part of the variation in the dependent variable (R Squared =0.421), indicating that it accounts for about 42.1% of the variance in a child's academic achievements.

2.2.2 Regression analysis

The same dependent variable, the child's result, was used in the regression analysis testing.

Table 4

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	200.423	10	20.042	25.125	.000[b]
	Residual	275.204	345	.798		
	Total	475.626	355			

a. Dependent Variable: Child' Result

b. Predictors: (Constant), Parental_Participation10, Parental_Participation9, Parental_Participation8, Parental_Participation7, Parental_Participation6, Parental_Participation5, Parental_Participation4, Parental_Participation3, Parental_Participation2, Parental_Participation1

The table above tests whether the regression model is accurate or not. A significant model fit for forecasting the dependent variable "Child's Result" is found by ANOVA (analysis of variance) with F=25.124 and p=0.001. A significant portion of the variance in the dependent variable is explained by the regression model, which includes the predictors. The mean squares show that the predictors account for the observed variance in the child's academic performance as a whole. The residual sum of squares implies that there may be some unexplained variation, but the model's significance highlights the usefulness of the included factors in predicting the child's academic achievement.

Table 5

Coefficients of independent variables as sought from regression

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.841	.352		-2.391	.017
	Parental_Participation1	.957	.163	.290	5.887	.000
	Parental_Participation2	.274	.123	.109	2.224	.027
	Parental_Participation3	.016	.266	.003	.061	.951
	Parental_Participation4	.155	.128	.062	1.209	.227
	Parental_Participation5	.002	.107	.001	.015	.988
	Parental_Participation6	1.117	.178	.302	6.265	.000
	Parental_Participation7	.205	.163	.061	1.261	.208
	Parental_Participation8	-.823	.203	-.195	-4.056	.000
	Parental_Participation9	.382	.122	.161	3.129	.002
	Parental_Participation10	-.093	.103	-.040	-.895	.372

a. Dependent Variable: Child' Result

The coefficients in the above table of the regression analysis provide insights into the relationship between the dependent variable "Child's Result" and the predictor variables. The constant is -0.841, indicating a negative intercept.
Unwrapping the variables: "Attendance of Parents-Teachers Conferences", "Help with homework at home", "Punctuality at school', "Contact with school", and "Member of Parents-Teachers Association", exhibit statistically significant unstandardized coefficients. These coefficients indicate the change in the dependent variable associated with a one-unit change in the respective predictor, while the other predictors are held constant. Additionally, standardized coefficients (Beta) provide insights into the relative impact of each predictor variable, with "Punctuality" having the highest impact (Beta = 0.302) on the Child's Result. The t-values associated with significance levels indicate the statistical significance of these relationships.

2.3 The impact of parental involvement based on findings

The findings of the regression analysis shed light on the complex interactions between parental participation and a child's academic success. The results underline how important some facets of parental involvement are for encouraging a successful education. In particular, parents who actively participate in conferences ($B=0.957$, $p<0.001$) demonstrate a concrete commitment to their child's educational journey, thereby fostering a more conducive learning environment. Additionally, the correlation between efforts to ensure their children's punctuality ($B=1.117$, $p<0.001$) and their consistency in communicating with the school ($B= -0.823$, $p<0.001$) emphasizes the importance of parental watchfulness and cooperation with educational institutions in fostering academic success. Intriguingly, being part of the Parents Association emerges as a significant predictor in improving academic achievement ($B=0.302$, $p<0.002$) indicating that active parental involvement at the institutional level can have a positive impact on students' learning experiences. The study, however, shows that a child's reliance on parental assistance for daily homework and extracurricular activities does not significantly predict academic success, indicating the necessity for a well-balanced strategy to promote self-reliance and autonomy in learning. According to the estimated R-squared value of 0.421, the variables considered in the analysis can account for about 42.1% of the variation in the child's academic performance. This supports the widespread belief that active parental involvement has a positive impact and boosts academic results. Finally, parental engagement is a complex idea with a range of positive effects on a child's educational path. The analysis highlights the crucial role that effective interaction, cooperation, and participation among parents, children, and schools play in creating a climate that is supportive of learning.

3 Future research directions

The study is just an initial phase of a larger quantitative research project. If according to this study 42.1% of the students' results, a further study can be done to analyze what are the other factors impacting the child's achievements. Consequently, most of the responses to the survey are still to be analyzed. It is vital to keep the study's limitations in mind when attempting to draw general conclusions from its findings. The potential for bias is increased by the reliance on self-report measures. The survey's scope was limited to a single county, so caution is needed in generalizing the results. Thus, an additional survey can be conducted with more details into qualitative variables and must explore parental participation and academic accomplishments in more settings as well as groups in the future.

Conclusion

The study's findings show that parental involvement positively impacts students' academic outcomes by 42.1%. Nonetheless, the extent and nature of parental involvement may vary based on external factors. Therefore, policymakers and educators must recognize the diverse needs of students and provide tailored support to encourage parental involvement. It is critical to note that academic achievement is a multilayered construct influenced by a variety of subtle elements, even though the model helps to provide a nuanced understanding of these interactions. Therefore, this study acts as a first step, indicating the necessity for a thorough investigation to unravel the comprehensive landscape of impacts that shape student achievement.

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