

Investigating the Relationship Between Parents' Education and Students' Academic Achievement at the Secondary Level

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Abstract

The objective of the research was to explore the connection between parental levels of education and students' academic achievements in order to understand how parents' attainment of education relates to students' performance in different academic areas. The study was correlational and quantitative. The students of the 10th grade were randomly selected from Male Public Secondary Schools in Tehsil Muzaffargarh District Dera Ghazi Khan. The sample was 340 male Rural and Urban Public Secondary School students. The analysis of data from different demographic backgrounds showed that higher parental education often leads to improved academic performance due to better resource availability, higher expectations about education, and a home environment supportive of learning. The findings showed that higher levels of education attained by parents were a critical predictor of academic success. It is recommended that adult education programs be expanded so parents can develop skills to support their children and enable them to succeed academically. Engage parents through direct involvement in school-led workshops and family engagement activities.

Keywords: Parental education, Students' academic achievements, Parental involvement, Educational inequality

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Introduction

Parental education levels strongly influence students' academic achievements by determining the availability of resources in a household, attitudes toward education, and their involvement in a child's learning. There has been considerable research into the relationship between parental education and students' performance in school. However, it is still a highly relevant issue in more heterogeneous socio-economic contexts where educational inequalities persist. Parental education affects different sides of a child's learning background. Parents who are better educated will offer their children intellectual stimulation, a more structured home environment, and more exposure to learning resources that can boost cognitive development (Jeynes, 2022). In addition, such parents often model behaviors that encourage learning, such as reading at home, discussing academic topics, and setting high expectations for their children. Conversely, lower parental education levels may limit the resources and support available to students, potentially affecting their academic outcomes (Dumont et al., 2019).

Understanding Academic Achievement

Academic achievement is the level of educational attainment shown by a student, which is usually measured in terms of grades, standardized test scores, and overall academic performance. Academic achievement becomes an essential aspect at the secondary school level since students are getting ready for higher education and careers in the future. Several factors determine academic success, including individual abilities, school environment, teacher quality, peer relationships, and parental background (Boonk et al., 2018). Research indicates that students with more supportive parental involvement and higher parental education levels have consistently achieved better academic outcomes than their peers from less privileged backgrounds (Hill & Tyson, 2009).

Parental Education as an Important Variable

Parental education is a proxy variable for SES in educational research since it affects household income, resource availability, and family well-being in general. A parent who is better educated offers their child more academic support through financial stability, an appropriate learning environment, and guidance on academic tracks (Fan & Chen, 2021). This parent will also be more inclined to engage in positive parenting by asking questions, promoting independence, and maintaining regular communication with the teacher.

While more-educated parents can assist their children more effectively with education, such as being better knowledgeable about school curricula or not being able to help with homework, this sets up an "educational divide," where less-educated students struggle to reach their full potential, fostering cycles of inequality (Engzell et al., 2021). Understanding how these disparities manifest in secondary education is important for designing interventions that promote equity and inclusion in academic achievement.

Parental Involvement

The influence of parental education is direct, but it also affects the extent and character of parental involvement in education. Parental involvement may be defined as active participation by parents in their children's learning process at home and school. It includes attending parent-teacher conferences, assisting in homework, and developing a good attitude

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towards study. Research shows that educated parents are more likely to participate in school activities. Indeed, the higher education level of parents is directly linked to better academic performance (Kraft & Dougherty, 2019).

It was established that parental involvement mediates the relationship between parental education and academic achievement. For example, high parental involvement can compensate for other socio-economic disadvantages, thus showing the transformative potential of engaged parenting. Conversely, low parental involvement might exacerbate existing challenges among the students, particularly those from underprivileged backgrounds (Cheung & Pomerantz, 2018).

Gender Dynamics in the Parent-Child Relationship

Parental education has often been shown to influence academic performance, but gender dynamics always moderate its impact. For instance, evidence suggests maternal education impacts the child's performance more than paternal education does, especially for daughters (Conger et al., 2020). Such a finding gives an insight into how parental roles and societal expectations intersect with educational outcomes. Gender-specific analyses can provide a deeper insight into how parental education shapes academic achievement and inform targeted interventions to address disparities.

Socio-Economic and Cultural Considerations

It is not uniform that parental education correlates with academic success in all contexts. Socioeconomic and cultural factors significantly impact the extent to which parental education is translated into academic success. For example, in a low-income or rural environment, the lack of resources or less access to good schools may override the influence of parental education (Nugroho et al., 2021). Cultural attitudes can influence parental education, such as the value of academic success or expectations regarding gender roles, to name a few.

Current Developments and Latest Studies

Recent research has further stressed the strong relationship between parental education and student academic outcomes. Thus, for instance, Engzell et al. (2021) found that a plausible explanation for the fact that parents withstood school closures because of COVID-19 is that parental education is a predictor. They concluded that highly educated parents could better support their children's learning in school closures and counteract the adverse effects on academic outcomes.

Similarly, Dumont et al. in 2019 highlighted the relevance of parent education as a resource in enhancing academic motivation and self-regulation for secondary-level students. The study found that students whose parents were highly educated manifested higher intrinsic motivation and appropriate time management abilities, which are critical to high performance in schools at the secondary level.

The rationale of the Study

This study was motivated by recognizing the critical role of parental education in shaping students' academic outcomes, particularly at the secondary school level. Academic

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achievement during this stage is important for the student's future educational and career prospects. While there are many contributing factors to academic success, parental education has been found to be a critical factor because higher education attainment often results in more significant support, resources, and guidance parents offer their children (Fan & Chen, 2021). Conversely, a parent with lesser education might be less prepared to offer similar support to the child, eventually leading to a gap in achievement.

Secondary school is a critical period where students face increased academic pressure and decide their educational and career paths. As such, the influence of parental education on students' academic outcomes is particularly significant. This study explored how different parental education levels impacted students' academic performance, especially in socio-economically diverse settings. The study was helpful in understanding through which factors of parental education variables, such as motivation, involvement in school life, and accessible learning resources, may influence success.

Through this specific relationship, it was hoped the study would illuminate some ideas for education practitioners, politicians, and the family. It was assumed that a deeper understanding of this relationship between education and the outcome of students' parental education could inform strategies for reducing educational inequality and promoting greater involvement by parents, especially in contexts where students from lesser-educated families may be required to add support to enhance their academic outcomes. Ultimately, the findings offered practical recommendations for improving student outcomes by enhancing parental engagement and addressing educational disparities, thus promoting more significant equity in secondary education.

Statement of the Problem

Despite numerous studies on what determines academic success, the interaction between parental education and the academic achievement of students in secondary school remains an under-researched area of study, especially in diverse socio-economic settings. Parental education has been recognized as one of the most crucial factors influencing students' academic results, but its effect on secondary school students is not well established. In many cases, students from less educated families suffered a lot because they had poor conditions for receiving education, low parental involvement, and lower academic encouragement than their peers, and this factor became very decisive for them. This paper tries to fill the research gap by discussing the various dimensions of parental education and its impact on the academic performance of secondary school students. It sought to determine whether students from highly educated parents performed more academically than their peers from less-educated families and explored how such a relationship occurred differentially within various socio-economic and cultural frames. Thus, in so doing, it explored how parental education may be used as an input to improve student achievements, bring down educational inequality, and inform policy aimed at assisting the most vulnerable groups of students.

Objectives of the Study

1. To assess the relationship between parents' education and students' academic achievement in secondary schools.
2. To make recommendations for educational policy and intervention to improve the gap

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in academic achievement.

Research Questions

1. To examine the relationship between parental education and students' academic achievement at the secondary school level.

Significance of the Study

The association of parental education with students' academic achievement is of interest to policymakers, educators, and families in their efforts to close educational gaps and promote equity. This study, therefore, tries to provide the basis on which parental involvement will be enhanced, underprivileged families supported, and systemic barriers to educational success addressed.

Delimitations of the Study

The study was delimited to:

Male students of the public secondary schools in tehsil Muzaffargarh.

Literature Review

The association between parents' level of education and student performance has been so well documented that it now lies central in predicting educational outcomes. Parental education enhances students' academic performances through resource provision, active involvement, and good role modeling. This review synthesizes recent studies that explore these dynamics and their implications for secondary education.

Baji and Sarki (2020) studied the combined effects of parents' education and academic self-efficacy on students' achievement in Nigerian secondary schools. The results from the research indicated that there is a strong positive relationship between fathers' level of education and the student's GPAs. It showed paternal education levels as one of the most substantial predictive variables for success. Agbola and Okewole (2023) reported the influence of family structure and parental education on lower primary students in Nigeria. Their findings showed that the higher the level of parental education, the more parents can create an environment that supports academic success by improving learning environments and resources.

In Malaysia, the positive effects of parents' education level on schoolchildren at secondary schools were reflected by Norsuhaily et al. (2017), which were related to academic achievements and attitudes toward learning. A similar outcome concerning parental involvement in Ghana could be viewed in the paper. Amponsah et al. (2018) expressed that parents with higher educational achievements can show more significant concern for their children, which gives the best stimuli in improving school achievements. This supports the mediation role of parental involvement in relating parental education to student achievement.

Tahir et al. (2021) considered the socioeconomic implications of parents' education regarding the student's academic performance. It has been iterated that a high level of parental education opens pathways for conducive learning environments and is significantly responsible for improving outcomes. In addition, Ngangi (2023) recorded at Kenyan public

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schools that students have improved their academic performance due to more educated parents. It has developed greater participation by the parents in educational activities for better involvement outcomes.

Ullah (2019) investigated the role of parental education in contributing to school performance in Pakistani secondary schools and found that maternal and paternal education levels strongly and significantly correlate directly with students' academic performance. In support, Marzulina (2018) reported on the influence of parental education on achievement in English for secondary school students and demonstrated that such enhances performance in language-related subjects and the development of language skills.

Kung studied in 2016 how parental socioeconomic status, such as education, affects academic achievement in Taiwanese middle schools. The study revealed that the level of education attained by parents is important in determining success through increased involvement and resource investment. Idris et al. (2020) extended this research by analyzing the effects of fathers' and mothers' education levels on students' performance across multiple subjects, finding consistent correlations between higher parental education levels and improved academic outcomes.

Conclusively, the recent studies that have been carried out indicate a constant affirmation that parental education dramatically affects students' performance at a secondary level. Educated parents provide the necessary material and cognitive resources; they act as role models and actively participate in their children's education. This literature emphasizes policies and programs to promote parental education and involvement to be laid down to improve student achievement at the secondary education level.

Research Methodology

The study was a correlation-by-method. A quantitative approach was followed to understand the relationship between Parents' Education and Students' Academic Achievement.

Population of the study

There were 35 male public secondary schools in tehsil Muzaffargarh, of which 11 were in urban areas while the other 24 were in rural areas.

Source:

(https://schoolportal.punjab.gov.pk/sed_census/new_emis_details.aspx?distId=323--Muzaffargarh).

Sample of the study

Twenty-five schools were selected out of 35 using a table of random numbers. Six (6) urban and 19 rural male public secondary schools were selected for data collection in tehsil Muzaffargarh. The students of the 10th grade were randomly selected from every Male Public Secondary School in Tehsil Muzaffargarh. So, the sample was 340 male Rural and Urban Public Secondary School students, which provided sufficient statistical power for detecting medium to large effect sizes with a confidence level of 95% (Etikan et al., 2016; Creswell, 2014).

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Research Instruments

A self-developed instrument was used to collect the parental education data from the students, and a self-developed Academic Achievement Test (AAT) was used for the 10th grade.

Reliability of Research Instruments

A pilot study was conducted by administering an academic achievement test. The test was given to randomly selected 20 students from the population. Academic achievement scores were obtained. This allowed the researcher to evaluate the clarity and comprehensibility of the questionnaire items.

In this research, the following instruments were used:

- i. Parental Educational (PE) levels, like illiterate, primary, elementary, secondary, graduate, and high qualification.
- ii. Academic Achievement Test (AAT)

The reliability of the (PE) tool was 0.92, and (AAT) tool was 0.87

Data Collection

Data was collected through visits to the respondents' schools, and the questionnaires were distributed among participants. An achievement test was also conducted. Then, achievement tests scored and correlated with students' parental education status.

Data Analysis

After the data collection phase, the data was analyzed using SPSS. Descriptive and inferential statistics were used to analyze data through SPSS. For inferential statistics, Pearson's Correlation Coefficient (r) was used.

Results

Table No. 1 Regression Analysis of Relationship of Father's Education and Academic Achievement (Model Summary)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229	.052	.050	12.421

a. Predictors: (Constant), Father's Education

Table 1 shows the regression analysis of Students' Father's Education and Academic Achievement. According to the data analysis of the model summary, the R-square value was .052, which showed that students father's education caused a 5.2% change in students' academic achievement.

Table No. 2 Regression Analysis of Students Father's Education and Students' Academic Achievement (ANOVA)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2882.414	1	2882.414	18.683	.001
	Residual	52145.924	338	154.278		
	Total	55028.338	339			

a. Dependent Variable: Total Marks

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b. Predictors: (Constant), Father's Education

Table 2 indicates the regression analysis of the student's father's education and academic achievement. According to the data analysis of ANOVA, the $p < 0.05$ showed a significant relationship between students father's education and academic achievement.

Table No. 3 Regression Analysis of Students Father's Education and Students' Academic Achievement (Coefficients)

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	69.451	2.522		27.538	.002
1 Father's Education	3.543	.820	.229	4.322	.01

a. Dependent Variable: Total Marks

Table 3 indicates the regression analysis of students father's education and students' academic achievement. According to the data analysis of coefficients, the beta value was .229, which showed a positive relationship between students' father's education and students' academic achievement. In other words, it indicates that if students' father's education interacts with one unit, their academic achievement will increase by 22.9% positively.

Table No. 4 Regression Analysis of Relationship of Mother's Education and Academic Achievement (Model Summary)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.195	.038	.035	12.515

a. Predictors: (Constant), Mother's Education

Table 4 indicates the regression analysis of Students' Mother's Education and Academic Achievement. According to the data analysis of the model summary, the R-square value was .038, which showed that students mother's education caused a 3.8% change in students' academic achievement.

Table No. 5 Regression Analysis of Students Mother's Education and Students' Academic Achievement (ANOVA)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2090.076	1	2090.076	13.345	.002
	Residual	52938.262	338	156.622		
	Total	55028.338	339			

a. Dependent Variable: Total Marks

b. Predictors: (Constant), Mother's Education

Table 5 indicates the regression analysis of the student's mother's education and academic achievement. According to the data analysis of ANOVA, the $p < 0.05$ showed a significant relationship between students mother's education and academic achievement.

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Table No. 6 Regression Analysis of Students Mother's Education and Students' Academic Achievement (Coefficients)

Model		Coefficients			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
	(Constant)	73.776	1.823		40.476	.003
1	Mother's Education	3.049	.835	.195	3.653	.001

a. Dependent Variable: Total Marks

Table 6 indicates the regression analysis of students mother's education and students' academic achievement. According to the data analysis of Coefficients, the beta value was .195, which showed a positive relationship between students mother's education and students' academic achievement. In other words, it indicates that if students mother's education interacts with one unit, then students' academic achievement will increase by 19.5% positively.

Findings of the Study

The research findings show a vast positive correlation between parental education and students' achievement. Specifically, students' father's education contributes to a variance of 5.2% in academic performance ($R^2 = .052$), and this has a beta value of .229, where a one-unit increase in the father's educational attainment positively adds 22.9% more to the enhancement of students' academic performance. Similarly, students' mother's education explains a 3.8% variance in academic achievement, $R^2 = .038$, and the beta value is .195, indicating that a one-unit increase in mother's education positively influences students' academic achievement by 19.5%. Thus, this research shows the importance of parental education in fostering students' academic success.

Discussion

The study emphasizes the profound influence of parental education on students' academic achievement, a relationship widely documented in educational research. The significant positive correlations established between fathers' and mothers' education levels and students' academic performance reinforce the role of familial socio-economic factors in shaping educational outcomes—the beta value. Two hundred twenty-nine indicated that fathers' education showed a stronger association than mothers', as its change contributed to a 5.2% variation in academic performance. The change in mothers' education contributed 3.8%, and the respective beta value was .195. Such results fit previous studies focusing on the diverse impacts of both fathers and mothers on their offspring's academic pathway.

Fathers' Education and Academic Achievement

Fathers' education is often associated with better financial capacity and structured learning environments. Educated fathers are likely to offer educational materials, after-school activities, and private tutoring, all impacting the achievement level (Fan et al., 2021). Another

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related aspect is that fathers with higher education levels offer behaviors that exhibit tasks such as discipline and goal-setting, creating a culture of academic excellence at home (Lareau, 2011).

Studies by Hartas (2022) show that fathers' education determines children's achievements in STEM. This means that fathers' participation in activities like science experiments and math games is positively associated with better outcomes. The conclusion drawn from these studies is congruent with this study, that is, through resource provision and direct educational activity involvement, fathers' education is a catalyst for academic performance.

Mothers' Education and Academic Achievement

Mothers' education is an important factor, although slightly lower in influence in this study. Educated mothers usually foster a rich, stimulating home environment that encourages early literacy and cognitive development (Sylva et al., 2020). Mothers with higher education levels are more likely to read to their children, engage in meaningful conversations, and help complete homework, all of which contribute to academic success (Barajas et al., 2021).

Studies by Walker et al. (2019) show that a mother's education influences the early years and sets the track for future academic accomplishment. This coincides with evidence that maternal education contributes to children's language development and executive functioning capacities, both necessary for academic achievements.

Combined Impact of Parent Education

Although this study individually evaluates the impact of fathers' and mothers' education, research indicates that their combined effect is much stronger. A study by Davis-Kean et al. (2018) concludes that educated parents are more likely to practice collaborative parenting, thus balancing and supporting children in a setting that promotes academic excellence. Chen et al. (2021) concluded that children who grow up in households where both parents have a higher education degree perform better on standardized tests than their peers and possess better social-emotional skills.

Cross-Cultural Perspectives

Parental education varies in influence depending on the culture. For example, in collectivist societies, extended family tends to amplify the influence of parental education (Ho et al., 2020). Individualistic cultures instead tend to place a greater emphasis on parental autonomy, where parents' direct attainment of education takes more of an effect (Kim et al., 2022).

Implications and Recommendations

The findings need policies to raise access to adult education, especially targeting the disadvantaged in society. Educating parents through such programs has a cascading impact on future generations for academic success. Moreover, there are workshops in schools and initiation of activities, which can teach parents how best to involve their children in achieving academic success.

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Conclusion

This study supports parents' education as a pivotal influencer of student academic performance. Both fathers and mothers contribute highly, though by different mechanisms. These findings highlight the need to increase parental education and encourage parental involvement in learning to bridge educational disparities.

Recommendations

1. Expand adult education programs so parents can develop skills to support their children and enable them to succeed academically.
2. Directly involve parents in school-led workshops and family engagement activities.
3. Promote policies that support and encourage education for parents in order to close the gap in academic achievement.

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