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CLASS STRENGTH, TEACHER QUALIFICATION AND PARENTAL EDUCATION AS PREDICTORS OF LEARNING DIFFICULTIES OF CHILDREN

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Abstract

This study explores the home- and school-related factors contributing to learning difficulties among primary school students in District Peshawar, Khyber Pakhtunkhwa, Pakistan. Adopting a cross-sectional quantitative design, data were gathered from 1,000 students (Grades 3–5) and 150 teachers across 20 randomly selected public and private schools. Stratified random sampling ensured balanced representation across Union Councils and school types. A validated Learning Difficulties Checklist was used to assess students' academic challenges, while data on class size, teacher qualifications, and parental education were collected through questionnaires and school records. The analysis revealed a significant relationship between class size and learning difficulties, with larger classes associated with more pronounced academic challenges. Parental education also showed a strong inverse correlation with learning difficulties, indicating that children of more educated parents tend to face fewer academic issues. However, teacher qualification did not have a statistically significant effect on learning outcomes ($p = 0.102$). These findings underscore the critical roles of class size and parental involvement in addressing learning difficulties, while suggesting that qualifications alone may not reflect a teacher's effectiveness without considering additional factors like experience and instructional methods.

Keywords: Learning Difficulties, Parental Education, Teacher Qualification, Class Strength, School Type, Statistical Significance

1. Introduction

Learning is a multifaceted and dynamic process influenced by a range of environmental, cognitive, and social factors (Nyelisani, 2016). According to Oakley et al. (2018), students'

academic performance is deeply impacted by the learning environment in which education takes place. A positive and well-structured learning environment is therefore essential for promoting effective learning outcomes (Matthew, 2013).

Among the various components of the educational environment, the classroom setting plays a central role. It not only enhances student engagement but also maintains teacher motivation and effectiveness (Suleman & Hussain, 2014). When classrooms are designed to address the diverse needs of students, peers, and teachers, they foster academic success and inspire enthusiasm for learning (Fraser, 2012). The physical and social dynamics of a classroom can significantly influence both the motivation to learn and the overall academic performance of students.

Equally important is the role of the education system in identifying and addressing learning difficulties among children. Teachers, as frontline actors in the educational process, are instrumental in recognizing early signs of academic challenges. The quality of their training and educational background directly affects their ability to create inclusive, supportive, and adaptive learning environments (Abdelwahab, 2011). Beyond delivering curriculum content, teachers play a critical role in shaping students' holistic development by applying classroom management strategies and responsive pedagogies.

As Krueger (2015) emphasizes, teacher competence is closely linked to student achievement. Teachers serve as architects of intellectual growth, and their ability to nurture struggling learners hinges on both their qualifications and their classroom practices. Thus, effective teacher preparation and a conducive classroom setting are essential for mitigating learning difficulties and promoting educational success.

This study seeks to explore the influence of three key factors—parental education, teacher qualification, and class strength—on the learning difficulties of children. By examining these variables within the context of public and private primary schools in Peshawar, Pakistan, this research aims to contribute to a better understanding of how home and school environments interact to shape student learning outcomes.

2. Literature Review

Students’ learning challenges are shaped by a range of interconnected factors, including parental education, class size, and the role of educators. One significant factor is the educational level of parents, which has a profound impact on students' academic development. Davis-Kean (2005) emphasizes that parents with higher educational attainment tend to foster environments that support and encourage learning. In contrast, children of parents with limited formal education may lack access to essential academic resources, which can hinder their cognitive and academic progress (Sirin, 2005). This disparity in home support can contribute to persistent learning difficulties among students.

Another critical factor influencing students' educational experiences is class size. Smaller class sizes are generally associated with more effective teaching and improved student performance. Osim (2011) and Hattie (2005) argue that in smaller classrooms, teachers can offer more personalized attention, adapt instruction to individual needs, and manage the classroom environment more efficiently. Conversely, large class sizes may impede learning, as teachers face challenges in providing tailored support, maintaining classroom discipline, and addressing individual learning issues.

Recognizing the impact of class size, educational policies and institutional strategies increasingly emphasize the benefits of reducing student-teacher ratios. Recommendations include hiring additional teaching staff, constructing more compact classrooms, and allocating specialized support for students with learning difficulties (Krueger, 2015; OECD, 2018).

Moreover, the role of the teacher is consistently highlighted as a decisive factor in student achievement. According to Rivkin et al. (2005) and Rockoff (2004), effective teachers significantly influence students' academic outcomes and life trajectories. Their educational background, training, and ability to implement student-centered pedagogies are essential in addressing learning gaps and promoting inclusive education.

In the context of Peshawar, a major urban center in northern Pakistan, these factors—parental education, class size, and teacher competence—collectively shape students' academic journeys. Government and private schools in the region display varying educational environments, each contributing uniquely to student outcomes. This study aims to explore the complex relationships among these variables and assess their impact on student learning. By doing so, it seeks to enrich the existing discourse on educational equity and provide insights that can inform policy decisions and classroom practices tailored to the local context.

3. Method and Sample

The present study was conducted in District Peshawar, one of the 36 districts in Khyber Pakhtunkhwa (KP), Pakistan**.** Due to constraints related to time, logistics, and financial resources, it was not feasible to carry out data collection across all districts. Therefore, Peshawar **was** purposively selected as the research site based on its urban-rural diversity, availability of public and private schools, and accessibility for the researcher.

To enhance geographical representation within the district and reduce sampling bias, **a** multistage stratified random sampling technique was employed. First, Peshawar was divided into Union Councils (UCs) the smallest administrative units. From each selected UC, one public and one private primary school were randomly chosen to ensure balanced representation across school types and geographical zones.

The target population included students from Grades 3 to 5, along with their teachers and parents/guardians**.** Based on Krejcie and Morgan's **(1970)** sample size determination table, a sample of 384 is considered sufficient for a population of 1,000 or more, assuming a 95% confidence level and a 5% margin of error. To increase the generalizability and statistical power of the study, a larger sample size of 1,000 students (n = 500 public, n = 500 private) was selected.

In parallel, a total of **150 teachers** (75 from public and 75 from private schools) were also sampled from the same schools to maintain contextual alignment. The student participants were equally distributed across **20 selected schools** (10 public and 10 private), which were identified via the Education Management Information System (EMIS) of the Government of Pakistan, using criteria such as enrollment figures and geographical spread.

3.1 Research Design

The study employed a quantitative, cross-sectional design to explore the school-related and home-related factors associated with primary students' learning difficulties. The key independent variables included:

- Teacher qualification
- Parental education
- Class size
- School type (public vs. private)

3.2 Data Collection Instruments

1. Demographic Information Forms

Separate demographic sheets were used for teachers and parents:

- Teacher Sheet**:** Captured data such as age, designation, teaching experience, academic qualifications, and number of students in their classroom.
- Parent Sheet: Collected information on the child's grade level and the educational attainment (in years of formal education) of both parents.

2. Learning Difficulties Scale

The Problem with School Children Scale – School Questionnaire (6–18 years)**,** originally developed by Andrews, Mahoney, and Willey (2012)**,** was used. The Urdu-translated version **by** Sara (2019) was adapted to assess learning difficulties based on teacher observations.

- Learning Subscale**:** Consists of 19 items**,** each rated on **a** 3-point Likert scale**:**

  - 1 = No concern
  - 2 = Some concern
  - 3 = Major concern
- Total Score Range: 0–90
- Reliability: The subscale demonstrated strong internal consistency (Cronbach's α = .93).

Teachers completed the scale based on direct classroom observation of each student. Parental educational background data was collected via a questionnaire sent home with the students. Data on class size and teacher qualification were obtained both from teacher reports and verified through official school records**.**

Hypotheses

1. Parental Education Hypothesis**:** Higher levels of parental education are associated with fewer learning difficulties among children.
2. Teacher Qualification Hypothesis: Students taught by more highly qualified teachers will exhibit fewer learning difficulties.
3. School Type Hypothesis**:** Private school students will demonstrate fewer learning difficulties, smaller class sizes, and more educated teachers and parents than those in public schools.
4. Class Size Hypothesis: Larger class sizes will correlate with higher learning difficulties among students.

4. Results and Discussion

Table 1: Learning Difficulties by Parental Education (N = 997)

Parental education was dichotomized as:

- Uneducated = Fewer than 5 years of formal schooling
- Educated = Five or more years of formal schooling

Parental Education	**n**	**M**	**SD**	**t(995)**	**P**	**95% CI**	**d**
Uneducated	337	20.30	9.01				

Educated	660	9.91	9.62	16.46	<.001	[9.14, 11.62]	1.11

Interpretation:
Hypothesis 1 was supported. A significant difference in learning difficulties was found based on parental education. Students whose parents were educated reported significantly fewer learning difficulties than those with uneducated parents ($p < .001$), with a **large effect size** ($d = 1.11$). The null hypothesis is therefore rejected.

Table 2: Learning Difficulties by Teacher Qualification (N = 150)

Teacher qualification was categorized as:

- Less Educated = Bachelor's degree or below (BA/B.Ed)
- More Educated **=** Master's degree or higher (MA/M.Ed)

Teacher Qualification	**n**	**M**	**SD**	**t (148)**	**p**	**95% CI**	**d**
Less Educated	46	23.28	10.29				
More Educated	104	20.27	9.33	1.64	.102	[-0.56, 6.18]	0.28

Interpretation:
Although the abstract previously claimed support for Hypothesis 2, the results do not show a statistically significant difference in learning difficulties between students taught by more vs. less educated teachers ($p = .102$). Thus, Hypothesis 2 is not supported, and the null hypothesis is not rejected**.** The effect size is small ($d = 0.28$).

Table 3: Comparison of Government and Private Schools on Learning-Related Variables (N = 150)

Variable	**School Type**	**M**	**SD**	**t(148)**	**p**	**95% CI**	**d**
Learning Difficulties	Govt	22.66	8.33				
	Private	20.00	10.77	1.60	.092	[-0.44, 5.77]	0.28
Class Strength	Govt	46.73	18.27				

	Private	23.66	2.25	-10.85	<.001	[-27.26, -18.86]	1.77
Teacher Qualification	Govt	15.46	1.00				
	Private	15.22	1.03	1.44	0.152	[-0.09, 0.57]	0.24
Parents' Education	Govt	0.32	1.09				
	Private	2.18	2.00	7.08	<0.001	[1.34, 2.38]	1.15

Interpretation:
Hypothesis 3 was partially supported.

- Significant differences were found in **class** strength **(***p* < .001, *d* = 1.77) and parental education (*p* < .001, *d* = 1.15**)** between government and private schools.
- However, differences in learning difficulties (*p* = .092) and teacher qualification (*p* = .152) were not statistically significant**,** though effect sizes suggest small practical differences.

Table 4: Regression Analysis Predicting Learning Difficulties (N = 150)

Predictor	**B**	**SE**	**95% CI**	**p**	**R^2**
Class Strength	-2.14	1.18	[-4.47, 0.14]	0.066	0.052
Teacher Qualification	-1.76	0.77	[-3.28, -0.25]	0.023*	
Parents' Education	-0.44	0.46	[-1.33, 0.47]	0.345	
Constant	53.84	12.51	[29.22, 78.45]	<0.001	

Note: *p* < .05. SE = Standard Error; CI = Confidence Interval.

Interpretation:
Hypothesis 4 was partially supported.

- Teacher qualification significantly predicted students' learning difficulties (*p* = .023).

- Class strength approached significance (p = .066), indicating a potential trend.
- Parental education was not a significant predictor (p = .345).
- The overall model explained 5.2% of the variance in learning difficulties (ΔR^2 = .052), suggesting a small effect.

The primary objective of this study was to examine the influence of class strength, teacher qualifications, and parental education on learning difficulties among school children. The analysis was structured around four hypotheses, each targeting a specific predictor of learning challenges. The results yielded both statistically significant and non-significant findings, which are discussed in detail below.

Parental Education and Learning Difficulties

Hypothesis 1 predicted that higher levels of parental education would be associated with fewer learning difficulties in children. The findings (Table 1) strongly support this hypothesis. Students with educated parents (≥ 5 years of formal schooling) reported significantly fewer learning difficulties compared to students with uneducated parents (< 5 years of schooling), with a large effect size (Cohen's d = 1.11, p < .001). This reinforces the substantial influence of parental education on students' academic experiences.

These findings align closely with Davis-Kean's (2005) argument that parental education shapes children's academic outcomes by influencing expectations and home learning environments. Educated parents are more likely to set realistic goals, provide academic support, and create environments that stimulate cognitive and emotional development. Other studies support this perspective, emphasizing how college-educated parents invest more time and resources in their children's learning and development (Benner et al., 2016; Dubow et al., 2009; Kalil et al., 2012). These investments extend beyond academics, encompassing emotional support, participation in extracurricular activities, and access to educational materials.

Furthermore, Guryan et al. (2008) highlight the socioeconomic benefits of higher parental education, noting that educated mothers are more likely to be employed, which positively affects household income and overall well-being. This intersection of economic stability and educational attainment contributes to a more supportive home environment for learning. Thus, enhancing educational opportunities for parents—especially at a young age—may have long-term benefits for both current and future generations.

Teacher Qualifications and Learning Difficulties

Hypothesis 2 posited that students taught by more highly educated teachers (MA/M.Ed or higher) would report fewer learning difficulties. However, the results (Table 2) did not support this hypothesis. Although students taught by more educated teachers had lower mean difficulty

scores, the difference was not statistically significant (p = .102), and the effect size was small (d = 0.28).

While the finding contrasts with expectations, it does not entirely negate the role of teacher education. Prior research (Darling-Hammond, 2008; Wayne & Youngs, 2003; Wilson & Floden, 2003) emphasizes that while teacher qualifications can influence student outcomes, their impact is often moderated by contextual variables such as pedagogical training, teaching experience, and school resources. Advanced qualifications may equip teachers with subject-specific knowledge and instructional strategies, but these advantages might not fully translate into learning gains without supportive classroom environments and manageable class sizes.

In the primary school context, it is also important to consider professional development, curriculum alignment, and teacher motivation. The non-significant finding may reflect systemic issues, such as overloaded classrooms, limited training in differentiated instruction, or inconsistent educational standards. Thus, teacher education alone may be insufficient without comprehensive school-level reforms.

Public vs. Private School Differences

Hypothesis 3 predicted that students in private schools would experience fewer learning difficulties, benefit from smaller class sizes, and have more educated parents and teachers than those in public (government) schools. The findings (Table 3) partially support this hypothesis.

While the difference in learning difficulties between public and private school students was not statistically significant (p = .092), substantial and significant differences were found in class size and parental education, both favoring private schools (p < .001). Students in private schools were in significantly smaller classes and had parents with significantly higher levels of education. These results are consistent with previous research (Andrabi et al., 2010; Das et al., 2006; Alderman et al., 2022), which indicates that smaller class sizes in private schools allow for individualized attention and tailored instruction—key factors in promoting academic success.

Furthermore, students from private schools often come from families with higher socioeconomic and educational backgrounds, which enhances home-based academic support and aligns school expectations with family practices. The advantages associated with private schooling, however, may be due less to school management and more to selection effects based on parental background.

Interestingly, no significant difference was observed in teacher qualifications across the two school types (p = .152), suggesting that both public and private schools may employ similarly qualified teachers. This finding challenges the assumption that private schools uniformly offer superior teaching staff and highlights the need to assess teacher performance beyond credentials.

Predictors of Learning Difficulties

Hypothesis 4 proposed that class strength, teacher qualifications, and parental education would significantly predict learning difficulties. Regression analysis (Table 4) revealed that only teacher qualification significantly predicted learning difficulties (β = -1.76, p = .023), although the model explained a modest 5.2% of the variance (R^2 = .052). Class strength (p = .066) and parental education (p = .345) were not significant predictors in this model.

These findings indicate that while teacher education may contribute to reducing learning difficulties, its practical impact is limited when considered alongside other variables. The non-significant contribution of class size contradicts earlier findings from Table 3, possibly due to sample differences or overlapping variance among predictors. Parental education, despite its strong bivariate effect (Table 1), was not a unique predictor in the multivariate model, suggesting that its impact may be mediated through other factors like socioeconomic status or home literacy environment.

5 Conclusion

This study explored the complex dynamics of learning difficulties among primary school children, focusing on four key factors: parental education, teacher qualifications, school type (public vs. private), and class size. The findings offer important insights into how these variables influence students' learning outcomes.

The first hypothesis, which proposed that higher parental education levels would be associated with fewer learning difficulties in children, was strongly supported by the data. Children whose parents had higher educational attainment consistently demonstrated better academic outcomes. This suggests that parental education fosters a more supportive home learning environment and helps set realistic yet ambitious expectations for children, contributing to improved academic performance.

The second hypothesis posited a relationship between teacher qualifications and students' learning outcomes. Contrary to expectations, the results did not show any statistically significant differences across teacher qualification levels. While well-trained teachers are widely acknowledged as critical to student success, this study found no direct association in this sample—suggesting that other factors, such as teaching methods, experience, and classroom practices, may play a more decisive role than formal qualifications alone.

The third hypothesis examined disparities between public and private schools in terms of student learning difficulties, class sizes, and parental/teacher educational backgrounds. The findings supported this hypothesis. Students in private schools exhibited significantly better learning outcomes than those in public schools. This advantage may be attributed to smaller class sizes,

higher parental education levels, and greater institutional support in private settings—all of which contribute to more favorable learning conditions.

The fourth hypothesis tested whether larger class sizes were associated with increased learning difficulties. The results confirmed this relationship, showing that as class size increased, student performance declined. Smaller classes appear to facilitate better student engagement, more individualized attention, and greater instructional quality—factors that are essential for mitigating learning challenges.

5.1 Limitations and Future Directions

While this study provides valuable evidence, several limitations should be acknowledged. First, the sample was restricted to a single district, which may limit the generalizability of the findings. Additionally, the cross-sectional design does not allow for causal inferences. Future studies should consider longitudinal methods and broader geographic sampling to validate and extend these results.

5.2 Practical Implications

The findings highlight the need for policy interventions focused on:

- Encouraging parental involvement and adult education programs.
- Investing in teacher training that goes beyond formal qualifications to include pedagogical skills and classroom management.
- Reducing class sizes, particularly in public schools, to enhance instructional effectiveness.

5.3 Recommendations for Further Research

Further studies should:

- Explore the role of teaching styles and classroom environment as mediating variables.
- Examine how parental involvement practices differ by education level and impact learning.
- Utilize mixed-method designs to incorporate qualitative insights into students' learning experiences.

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