
The Criticality of Pupil Teacher Ratio

Empirical Evidence from 766 Lower Primary schools of North East Karnataka

A Research Study from the Azim Premji Foundation



A three year long research study conducted by the Foundation reveals the importance of a good Pupil Teacher Ratio and its correlation with learning outcomes of children

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The Right to Education Act mandates a pupil teacher ratio (PTR) of 30:1 in order to ensure that children learn better in the classroom. A detailed three year long empirical study by Azim Premji Foundation in 2006 had underlined the importance of PTR and its direct correlation with students and school performance. The study shows that a PTR of less than 30:1 has a high correlation with superior school performance. Also when PTR goes beyond 40:1, schools seem to have less than 2% chance of turning in a strong performance.

INTRODUCTION

Does a smaller pupil teacher ratio Pupil Teacher Ratio (PTR) (of less than 30:1) enable students to learn better and aid classroom interaction?

The paper attempts to answer this question based on data from the evaluation of 766 lower primary government schools under the **Learning Guarantee Programme (LGP)** conducted jointly by the Azim Premji Foundation and the Karnataka government in 7 Districts of North East Karnataka during 2002 - 2005.

1,887 schools participate in the program including 766 lower primary schools. Learning outcomes in Kannada and Math of 61,709 children in classes 1 to 4 in these 766 schools were assessed.

Schools were assessed on the following criteria:

- enrolment of children in the habitation
- regular attendance of children
- level of learning in Language (Kannada) and Mathematics

The performance of schools reveals wide variety – from schools whose average achievement scores exceed 90% to those schools where practically no learning is happening.

PTR and School Performance: Key Findings

Schools in which the PTR was between 10 and 20, showed the best learning levels.

Performance dropped sharply as the PTR increased, particularly from 30 upward.

Only 8% of all the schools qualified under the learning criteria. Less than 2% of schools with PTR > 40:1 qualified.

Though the average PTR was 35:1, over 28 % schools had a PTR in excess of 40.

LEARNING GUARANTEE PROGRAMME (LGP): A SNAPSHOT

The LGP was a large scale pilot involving a large number of schools and students:

Schools Assessed in LGP Pilot (Year 2005)	
Parameter	Value
Total schools assessed	1,887
Lower primary schools assessed (Class 1 to 5)	766
Children assessed across all schools	2,54,577
Children assessed in lower primary schools	61,709

Schools participating in the LGP were independently assessed on the following criteria:

- Enrollment:** 100% of children in the habitation should have been enrolled in the school.
- Attendance:** At least 90% of enrolled children should have regular attendance
- Learning Level:** A significant % of pupils should have achieved desired learning levels as tested by external evaluators.

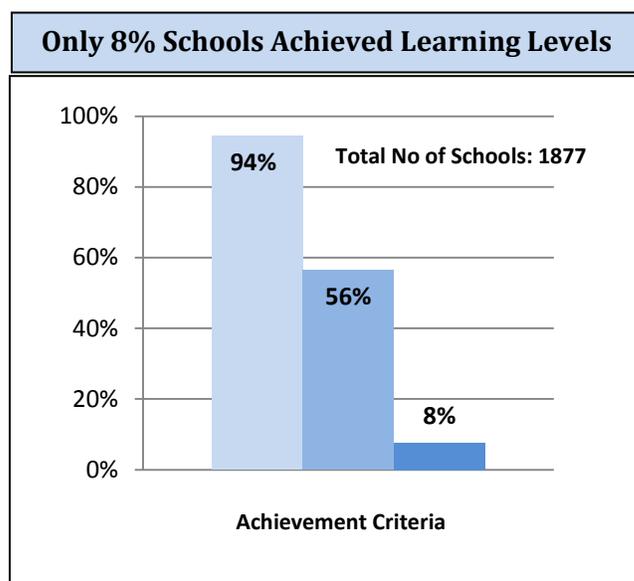
Learning achievement was tested for children from classes 1 to 4 in Language (Kannada) and Mathematics. Schools in the seven selected districts participated in the programme voluntarily.

A set of model question papers, which tested competencies rather than rote learning, was given to participating schools.

Based on the achievements of the schools along these three criteria, cash awards were presented to the qualifying schools.

MAIN FINDINGS OF THE STUDY

The first finding was that only about 8% of the schools assessed, qualified under all the criteria of enrollment, attendance and learning achievements.



Any further reference in this paper to “qualifying schools” is for such schools that met all three criteria.

Two other facts stood out during this study as seen in the table below. These are:

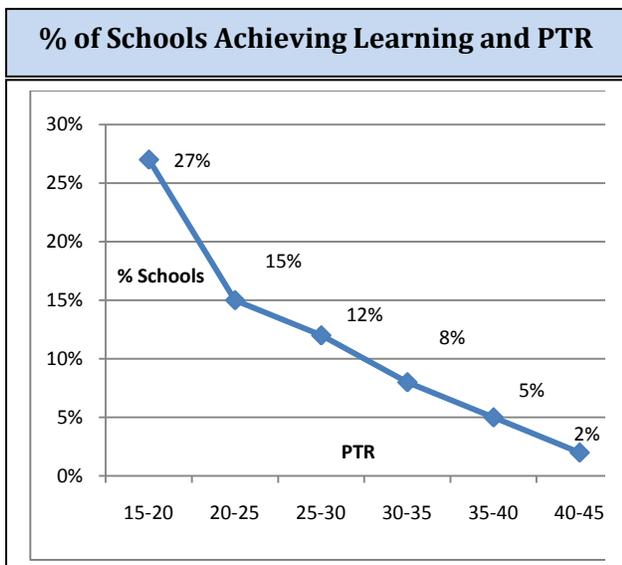
- More schools qualified in the lower primary segment (10.43%) as compared to the higher primary school (5.71%) segment.

- The average Pupil Teacher ratio in qualifying lower primary schools was much lower than the non – qualifying (other) lower primary schools.

Assessment of LP Schools and PTR			
Category of School	Number	Percent	PTR
Total LP Schools Assessed	766	100%	37.4
Schools Not Qualified	686	89.6%	39:1
Schools Qualified	80	10.4%	24:1

Correlation Between School Performance and PTR

The effect of PTR on learning levels can be quite profound as can be seen below.

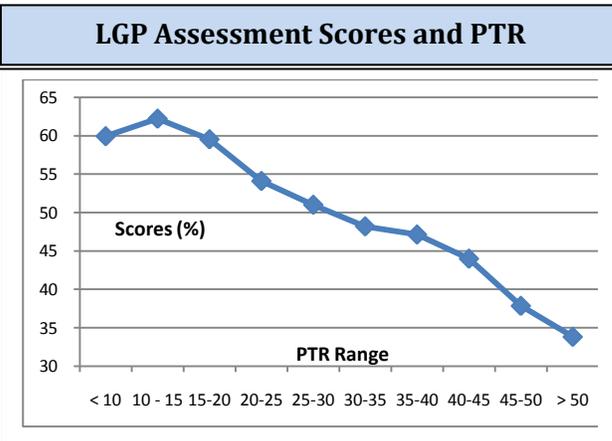


PTR and School Performance

Less than 2% of schools with a PTR of over 40 were able to deliver learning outcomes while 27% of the schools with a sub 20 PTR could do so.

Similarly analysis of the school’s overall average scores (the average of the learning achievement scores of the children in the school in Classes 1 to 4) shows that schools with greater PTR had lower performances.

The data also shows that the best performances in terms of average scores, maximum children with over 90% and minimum children with low scores are being delivered by schools whose Pupil Teacher ratio is in the sub 20 band.



Ultra Low PTR and Poor School Performance

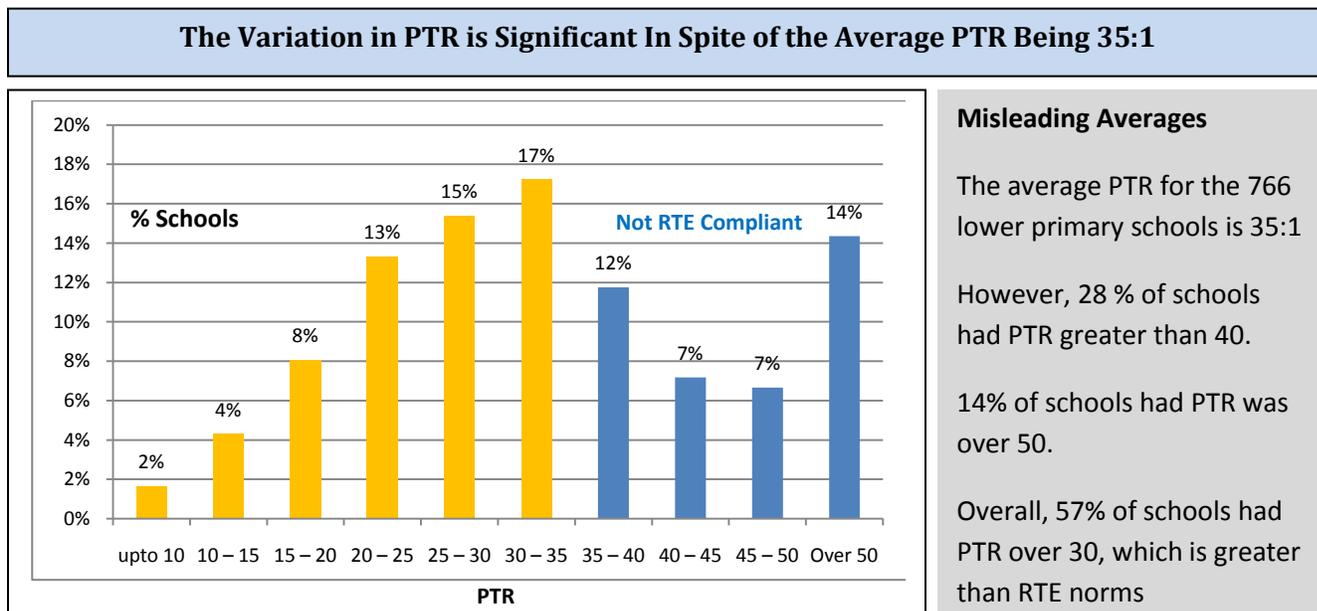
It can be seen that ultra low PTR (less than 10) results in poor performance. This could arise from insufficient peer interactions and classes which are boring for teachers and children without a minimum number of children.

Perhaps beyond a point, individual attention to a child becomes counter-productive?

THE STORY OF AVERAGE PTR

While it is clear that PTR has a significant impact on learning levels, average PTR in schools – at a district or state or national level – often hide the inequity among schools. Average PTR figures often cited by government schools can be misleading.

Our study shows that significant variations exist in the PTR of the schools assessed although the average PTR is 35:1 which is not too far away from the RTE norm of 30:1



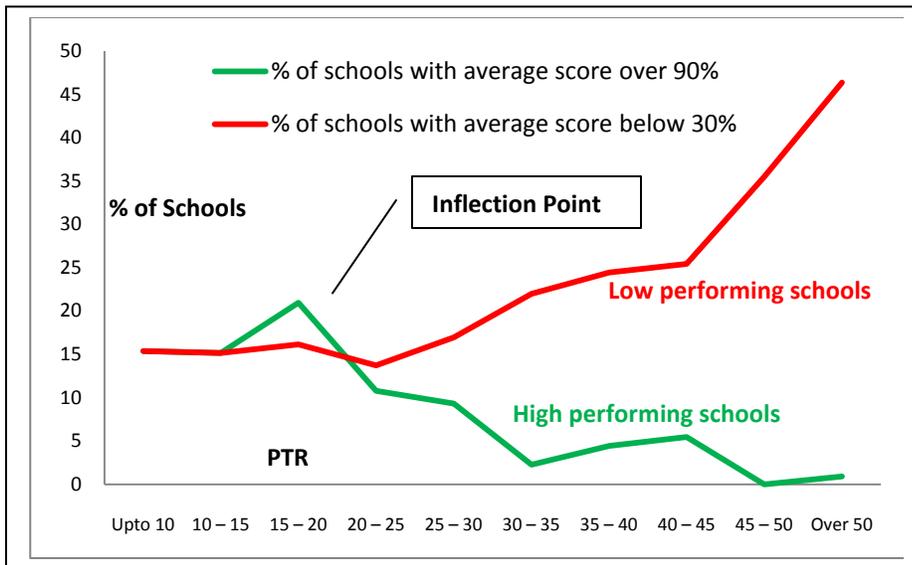
Even among top 10% of schools the PTR is skewed. 75% of top schools have a PTR of less than 30:1 while only 5% of these top schools have a PTR > 40:1

WHAT IS A DESIRABLE PUPIL TEACHER RATIO?

The impact of PTR is at all levels – for both high performances and low performances. The data shows that as the PTR increases, the % of schools that turn in poor scores (average school performance <30) increases and the % of schools with good scores (average school performance > 90%) also decreases.

These results are shown in the chart below.

PTR Impacts the Performance of Average, High and Poorly Performing Students



PTR Impacts Performance at All Levels

The proportion of high performing schools dips after PTR exceeds 20

The proportion of low performing schools rises sharply after PTR exceeds 25

The ideal PTR is thus somewhere between 20 and 25

CONCLUSION

Schools will turn in good performances if their Pupil Teacher Ratio is less than 30:1. At the same time, schools with PTR of more than 40 have very little chance of demonstrating that a majority of their children achieve the learning outcomes for their age or grade.

It is imperative that government schools – both state and central – follow the guidelines laid out by the RTE Act and ensure they have enough teachers to guarantee learning in the classroom.

There is also a need to simultaneously address issues of infrastructure, and the need to build the academic and pedagogic capability of teachers to take advantage of lower PTR. Many of the crucial class room processes can be better implemented if the teacher could operate in an environment of favourable PTR.



Azim Premji Foundation is a not for profit organization established in 2001 with a vision to facilitate a just equitable humane and sustainable society

NOTE: This is a short synopsis of the study. A detailed paper with the methodology, sample, and findings can be requested from the Azim Premji Foundation.