



Educational Inequality in Peru: What Works for Improving Secondary School Quality?

This policy brief summarises new research findings from two studies using Young Lives data (see Box 1) to determine what works for improving the quality of education in public secondary schools in Peru. It focuses on factors that contribute to improved performance in relatively difficult and disadvantaged circumstances, to identify successful approaches to improving school effectiveness.

Our research uses a comprehensive mixed-methods approach to understanding the factors underpinning improved school effectiveness – the first study of its kind in Peru. We also evaluate the impact of Peru’s Jornada Escolar Completa (JEC)¹ reform on improving educational outcomes across a selection of public secondary schools, through a package of measures to both increase the quantity of schooling hours and the quality of schools and teaching. The brief presents key policy recommendations in response to these findings.

¹ The Jornada Escolar Completa (‘Complete School Day’) reform is an intervention by the Peruvian Ministry of Education to improve the quality of education in public secondary schools; 2,001 secondary schools across Peru have joined the JEC reform since it began in 2015. See <http://jec.perueduca.pe>

Overview

Prior to the COVID-19 pandemic, Peru had shown significant improvements in educational outcomes over the last two decades, with wide access achieved for both primary and secondary school. Improvements in both reading and maths skills have been recorded in most national evaluations over this period. Young Lives has also documented improved results for its Younger Cohort, born in 2001, compared to the Older Cohort, born in 1994.

However, overall learning outcomes remain on average very low and Peru has consistently been at the lower end of international standardised evaluations (e.g. PISA),² with **significant inequalities in school achievement**, even before the pandemic. Students from the poorest households, in rural areas, and from indigenous backgrounds (where the mother tongue is indigenous/not Spanish) are the most disadvantaged.

The COVID-19 pandemic has had a huge impact on exacerbating inequalities in education following the closure of schools due to the national lockdown in March 2020, with only a small number of rural schools opening since October 2020. Most schools are likely to remain closed for the majority of the current academic year. After a lost year of learning for many students, addressing persistent inequalities and improving overall levels of *quality* of education should be a central part of COVID-19 recovery plans.

Research into school effectiveness in Peru (and Latin America more broadly) is relatively scarce, and predominantly focuses on primary education. Previous international evidence has largely shown that simply increasing students' learning time has not been particularly effective in improving educational outcomes in low-resource environments. Likewise, the lack of evidence on the impact of the 'One Laptop per Child' programme in Peru (Cristia et al. 2017), can be seen as a cautionary tale that increasing school resources alone (in this case, access to IT equipment) is seldom sufficient to improve learning outcomes, if not accompanied by other improvements, for example, in pedagogy and teachers' abilities. Recent initiatives in developing countries have therefore tended to focus on outsourcing to private providers or sending children to 'better' (privately run) schools.

Our first study shows wide variation in learning outcomes across public secondary schools, even when taking into account student backgrounds, suggesting that some schools are doing a better job than others. There are also wide variations in the quality of services provided by public secondary schools around the country. While persistent inequalities in secondary education must continue to be addressed by a broad range of government responses, our results demonstrate the potential for targeted policies at both the school and classroom levels to improve educational outcomes for young people.

This is the first study in Peru to undertake a comprehensive mixed-methods approach to better understand the factors underpinning improved school effectiveness at the secondary school level. Our research focused on public secondary schools in urban areas, given that most secondary schools nationwide are in such areas (71 per cent in 2017) and most students attend public schools (76 per cent in 2017). In addition, we focused on schools that were below the average in terms of socio-economic status of students, to ensure that the findings addressed what matters most for improving educational outcomes for poorer students. This included an in-depth analysis of high-performing schools in disadvantaged circumstances.

Our second study demonstrates that public secondary schools which have implemented the JEC reform show a considerable improvement in educational outcomes, particularly in maths and reading comprehension. There was also a significant improvement in technical skills and socio-emotional (soft) skills. Unlike many other initiatives in low- and middle-income countries, the JEC reform has been successful in improving education outcomes from *within* the public sector, without outsourcing to private education providers, through a combination of increasing time in school and a range of measures to improve the quality of schools and teaching. Key factors identified in improved educational outcomes align closely with the first study, including more time studying and less time working, better pedagogical (teaching) resources, additional school staff, increased teacher training and increased IT resources.

Key policy recommendations

1. Local and national governments' education programmes should increase investment in policies to **improve the quality of education of secondary schools from within the public sector** to help address educational inequalities. This will likely include identifying individual disadvantaged students, or particular groups of disadvantaged students, and supporting their specific needs.
2. Promote policies that enable **conducive learning environments**, including investing in school leadership programmes, for both teachers and principals, improved school infrastructure and positive school discipline practices.
3. Invest in policies and practices that prioritise the **quality of teaching** through the positive monitoring of teachers' performance and continual teacher professional development.
4. Encourage **teaching practices that foster strong teacher–student relations**, including providing regular feedback to students on their work, peer-mentoring approaches and providing extra learning materials tailored to students' needs.

² PISA is the OECD's Programme for International Student Assessment, a worldwide study to evaluate educational systems by measuring 15-year-old students' educational performance.

5. Promote initiatives to support **improvements in students' socio-emotional (soft) skills**, including self-esteem and self-belief in being able to effect change, for example, through support from educational psychologists.
6. **Expand the JEC reform** beyond the 2,001 secondary schools currently participating, when sufficient funding becomes available. This could be achieved in modest stages depending on available funding, and flexibly (taking into account the characteristics of each territory), potentially aiming towards national coverage.
7. Ensure that other **initiatives to increase hours of school learning time are combined with appropriate measures to improve the quality of schools**, focusing on improved pedagogical resources (including IT resources) and continual teacher professional development, improved school management and improved physical infrastructure. Given that resources are scarce, it is important to pay special attention to features of the JEC reform that can be easily replicated across all territories (for example, mentoring students).
8. Ensure **further research is carried out to monitor and better understand the long-term impact of the JEC reform** on improving school effectiveness, given that some characteristics of the programme might have changed (for instance, the salary advantage of JEC teachers has reduced over time). Potential synergies with targeted school feeding programmes should also be considered, to identify a holistic approach to improving the quality of education.
9. **Ensure adequate funding** is allocated to education in COVID-19 recovery plans, including secondary education, particularly at a time when significant amounts of aid have been redirected to health priorities.

comprehension tests, with teacher and school-level factors explaining around 20 per cent of the variance.

However, we also found a **wide variation of student learning levels across public secondary schools, even when taking students' backgrounds into account**. This suggests that some schools seem to be doing a much better job than others. While addressing inequality more broadly remains a critical goal for improving educational outcomes, there is still much that policymakers, teachers and school principals can do to help improve educational outcomes from within their school.

Effective schools demonstrate strong leadership and implement policies that promote a conducive learning environment

In high-performing schools, **teachers place strong value on the leadership and specialist knowledge of principals and vice-principals**, particularly in relation to policies and guidance that promote a conducive learning environment, including quality of teaching and positive school discipline. Principals had adopted these strategies as school policies, and had wholeheartedly led on their implementation, independently from the UGEL (local educational management units). While these policies are promoted by the Ministry of Education and should, in theory, be implemented in all public schools, this is often not the case.

In addition, **teachers' satisfaction with their relationships with different actors at the school (principal, colleagues, parents and students) had a positive influence** on reading comprehension test scores. Building and maintaining a conducive learning environment with strong and effective leadership has also been identified as a key characteristic of school effectiveness in a number of international studies.

Key findings from the two studies

Persistent inequality among students in Peruvian secondary schools impacts educational outcomes, but some schools are doing a better job than others

In line with broad international findings, our results demonstrate that secondary schools with a larger proportion of students from low socio-economic backgrounds underperform in both maths and reading comprehension tests, compared to schools with a larger proportion from high socio-economic backgrounds.

High-achieving students are typically from wealthier households, speak Spanish as their first language, are at an age appropriate for their grade, experience lower grade repetition, study at a higher grade level and do not work. Additionally, boys tend to achieve higher maths attainment than girls. Not surprisingly, student and family characteristics are by far the most significant factors in explaining performance in maths and reading

Effective schools prioritise the quality of teaching through monitoring teachers' performance and continual professional development

Schools that implement clear policies aimed at continually improving the quality of teaching are more likely to create a conducive learning environment. Our evidence underlines the importance of both monitoring teachers' performance and permanent teacher training, suggesting that successful schools not only create strategies focused on what is best for student learning, but also promote teachers' ongoing professional development.

Fostering a positive perception of monitoring teachers' performance was critical. Our sample high-performing schools implement regular teacher observations by the vice-principal (three times a year) that are followed up with constructive discussions and joint commitments with teachers to build on strengths and address weaknesses. **Permanent teacher training** was delivered through three main strategies: collegiate work, inter-learning groups and small workshops. Promoting teacher collaboration allows

teachers to learn from each other's pedagogical strategies and come up with joint solutions to shared difficulties; effective schools enable an environment where teachers can cooperate and work as a team.

Positive school discipline helps children to learn in the classroom

Positive school discipline is important for classroom behaviour and was appreciated by students, who reported this allows them to pay attention and learn better. School discipline, or respecting the 'norms of existence', refers to how pupils and teachers are expected to behave towards each other, including compliance with school rules such as school uniform, attendance in class and punctuality.

School discipline not only had a positive impact on classroom-level discipline but was also a school characteristic that produced pride among teachers, pupils and parents. Maintaining positive discipline was seen as a way for schools to care for their students and as a necessary condition for effective learning to happen.

Teaching practices that foster strong teacher-student relations are important for school effectiveness

Building a conducive learning environment in the classroom is supported by **positive teacher-student relations, including a sense of care and trust**. Teachers who enable open and friendly relations with students, result in students reaching out to teachers for advice. Other studies have shown that teachers who adapt their approaches to specific students' needs and demonstrate high expectations towards students' academic futures are associated with improved student achievement.

Our results show that teachers from effective schools are aware of students' contexts, the difficulties they face, and what they need in order to improve their learning outcomes. With that knowledge, teachers are able to tailor their teaching strategies and establish positive relations that benefit both high- and low-achieving students.

Teachers also provided support that went beyond students' academic achievement to include an overall concern for their well-being. This is also likely to help build **students' sense of belonging at school**, which our quantitative analysis highlighted as an important student-level factor associated with school effectiveness.

Providing regular feedback to students on their work, peer-mentoring strategies and extra learning materials are prioritised in high-performing schools

Providing regular **feedback to students** was highlighted as an important factor influencing school effectiveness in both our quantitative analysis and qualitative interviews. Teachers who provide students with feedback on their

homework were shown to have a positive impact on reading comprehension test scores. **Peer-mentoring strategies** during student teamwork, encouraging high-achieving students to help their classmates understand lesson content, were also found to be used regularly in the high-performing schools.

Likewise, the provision of **extra learning materials** (as complements to official texts), prepared by teachers and tailored to the specific needs of students, increased students' opportunities to practice more complex exercises, which is also related to teacher's expectations for students to attend higher education. Previous research has also found that teachers from effective schools create and select didactic materials to motivate their students and enrich class content.

Peru's JEC reform aims to improve educational outcomes by both increasing the quantity of schooling hours and improving the quality of schools and teaching

The JEC reform focuses on improving education outcomes from **within the public sector through a comprehensive package of initiatives**. This includes not only increasing the quantity of schooling hours but also includes a range of measures to improve the quality of schools and teaching, to enable improved learning and educational outcomes.

JEC adds 10 hours of teaching time to the normal school week (increasing pedagogical hours from 35 to 45 hours per week),³ **combined with a number of measures to improve school quality**, including improved physical infrastructure, improved school management (including additional teaching staff and increased salaries for teachers and principals), and targeted pedagogical support (including improved IT resources). The programme pays special attention to tutoring students, especially those who are lagging behind, with increased numbers of psychologists available at school to offer specialist socio-emotional support.

Schools which have implemented the JEC reform show considerable improvement in educational outcomes, particularly in maths and reading

Our evidence demonstrates that JEC schools have enabled **a significant improvement in both maths and reading comprehension test scores** compared to secondary schools that are not part of the reform. This finding was robust to a comparison with schools which were just outside the eligibility threshold for inclusion in JEC.

After one year, students in JEC schools showed improvements in test scores of more than 0.2 standard deviations in maths, which was categorised as a 'large' effect (> 70th percentile) in a recent benchmarking exercise looking across a variety of approaches to improve educational outcomes (Kraft 2020). A similar but slightly

³ A pedagogical hour is defined as 45 minutes of teaching time.

smaller improvement in reading comprehension test scores was also observed. In addition, students in JEC schools were up to 7 per cent more likely to be performing at the level appropriate to their grade.

There was also a significant improvement in technical skills and socio-emotional (soft) skills

Students in JEC schools showed significant improvements in their technical skills, including English language and computer literacy/digital skills. There was an improvement of almost 30 percentage points in the proportion of JEC students reporting that they speak English ('well' or 'a little bit') compared to students in regular public schools; JEC schools provide additional hours of English language teaching. Likewise, our results showed an increase of 27 percentage points in the proportion of JEC students reporting having used digital devices recently, in line with an increased availability of technology and access to the internet in JEC schools.

Improvements were also observed in socio-emotional (soft) skills, including increased self-esteem and self-belief in being able to effect change, as well as higher aspirations to complete university. Some of these improvements are likely to be linked to the increase in available psychologists at JEC schools who engage directly with students, including through providing mentoring. Previous research using Young Lives data has shown that soft skills are as important as technical skills in achieving positive life outcomes such as higher-paid jobs (Favara, Chang, and Sánchez 2018), and engaging in fewer risky behaviours such as smoking, drinking and underage sex (Favara and Sánchez 2017).

Key factors in improved educational outcomes in JEC schools included more time studying and less time working, better pedagogical resources, and increased teacher training

Using a wide range of data sources (Box 1), we were able to perform an in-depth analysis to identify which factors have been most important in explaining improved educational outcomes in JEC schools. These findings closely align with results from our first study set out above, further underpinning our policy recommendations.

1. Students' time use: students spent significantly more time studying and less time working (both unpaid and paid work)

Using Young Lives longitudinal data, our evidence shows that students in JEC schools **increased their time at school by approximately 2 hours a day** (in line with the extended hours policy). This was only offset by a very small reduction (10 mins) in schoolwork done at home, suggesting the extended school day has a significant impact on increasing the total number of hours spent studying.

On average, this resulted in JEC students doing **1 hour less of unpaid work at home, and 1 hour less of leisure/sleep time each day**. Previous Young Lives research has

shown that excessive unpaid work at home can put a strain on learning and have a detrimental effect on education progress and grades, particularly for disadvantaged young girls in secondary school, who typically shoulder the heaviest domestic work burden (Rojas, Guerrero, and Vargas 2016).

2. Additional school resources: JEC schools had more pedagogical (teaching) resources, alongside additional school staff and increased IT resources

An increase in the availability of pedagogical resources was observed to be one of the most important features of the JEC reform. Two key aspects of additional pedagogical support were first, having a **psychologist at the school** (required in JEC schools but not in regular public schools) who works with both teachers and students to provide a range of socio-emotional support. Second, participation in the Ministry of Education's **Acompañamiento Pedagógico** ('Pedagogical Accompaniment') **programme** (a component of the JEC reform, though not unique to it) providing JEC schools with **pedagogy specialists who work with teachers** to improve their teaching strategies.

We also observed an **overall increase in school staff**. Perhaps surprisingly, JEC schools were less likely to have a full complement of teaching staff than regular public schools, which could be an unintended consequence of the reform. This might be partly explained by the fact that JEC schools are required to hire more teachers by design. However, this was compensated by an increase in the number of support staff available, resulting in an overall increase in school staff in JEC schools.

In addition, the JEC reform significantly increased IT resources available to students. This typically enabled a larger number of classrooms to have access to computers and laptops, with better maintenance for IT equipment, enabling students to benefit from greater teaching innovation, including the use of laboratories and various computer resources.

3. Teachers' behaviour: increased teacher training and better pedagogical practices enabled higher levels of teacher specialisation

Our analysis investigated three main changes in teachers' behaviour in response to the JEC reform. The most important change was improved **teacher training and better pedagogical practices** leading to a higher level of teachers' subject specialisation (a decrease in the number of subjects taught by each teacher) and an increase in the probability that teachers receive support from the Acompañamiento Pedagógico programme.

Interestingly, we found **no evidence that working at a JEC school changed the overall time dedicated by teachers to school activities**. This suggests that while teachers must teach longer hours, the net impact when taking into account other school-related activities inside and outside school (preparing lessons, grading homework, talking with parents, interacting with other teachers) is not significant.

However, we did observe an increased probability of spending time working in other activities, especially

teaching in private schools, which is probably an unintended effect of the JEC reform; it is likely that certain types of teachers may be in high demand in nearby schools (e.g. English teachers, part-time teachers).

We also found **no systematic changes in teachers' attitudes and levels of satisfaction**, though the JEC reform does include an increase in teachers' salaries compared to those working in regular public schools, which might improve their motivation and effort. Notably, we did not observe any specific 'sorting effects' that may have skewed our results, whereby better teachers might be more likely to apply for a position in JEC schools (due to the higher salaries or better career development), or more motivated parents might be more likely to transfer their children to JEC schools (due to better learning outcomes).

Conclusion

These two quite different studies have provided very consistent findings in terms of what works to improve learning outcomes in Peruvian public secondary schools.

Our evaluation of secondary schools that have implemented the JEC reform demonstrates significant positive effects

on a range of student's achievements including maths, English, reading, IT access and sense of self-worth. Our conclusion is that increasing the school day to a similar length as private schools has been effective because it was accompanied by targeted investments: better pedagogical (teaching) resources, additional school staff, increased teacher training and increased IT resources.

Similarly, our study of high-performing public secondary schools in disadvantaged circumstances found that investments in pedagogy, teacher training, and fostering a positive classroom environment can improve students' outcomes, even when their family background has not given them the best start in life. While persistent inequalities in secondary education must continue to be addressed by a broad range of government responses, our results demonstrate the potential for targeted policies at both the school and classroom levels to improve educational outcomes for young people.

There is still much to do still to reduce inequality in educational outcomes in Peru, and it is noteworthy that both our studies focus on urban areas. Rural areas should be the next area of focus for future research.

Box 1. Research overview

Study 1: What Difference Do Schools Make? A Mixed Methods Study on Secondary Schools in Peru (Juan Leon, Gabriella Guerrero, Santiago Cueto, Paul Glewwe, forthcoming 2021)

This study investigates the factors associated with school effectiveness in secondary schools in Peru, focusing on which educational processes within schools are most influential in maths and reading comprehension, and in the case of the most effective schools, the importance that principals, teachers, and students place on school processes in explaining educational outcomes.

It used a comprehensive mixed-method approach that follows a sequential explanatory design. Quantitative data from the Young Lives secondary school survey in Peru (2017) enabled an evaluation of the effect of teacher- and school-level variables associated with high performance in maths and reading comprehension; this included data from 3,237 students from 61 public secondary schools across Peru, including surveys administered to students, teachers and principals. Based on this data, the study identified two high-performance schools in disadvantaged circumstances and conducted in-depth qualitative interviews and focus groups with students, teachers and principals to better understand which practices could help explain this higher quality.

Study 2: Do More School Resources Increase Learning Outcomes? Evidence from an Extended School-Day Reform (Jorge M. Agüero, Marta Favara, Catherine Porter, Alan Sánchez, 2021)

This study evaluates the recent JEC reform introduced by the Ministry of Education to improve the quality of education in public secondary schools; 2,001 secondary schools across all regions of Peru have joined the reform since it began in 2015. Eligibility requirements for schools to participate include having a minimum of eight secciones (classes), and the research design exploits this cut-off to help identify impacts.

The main results come from analysis of a national standardised student test (ECE) for Grade 8 students, including over 360,000 observations. Matching with other datasets, including the Young Lives survey, a national survey of school quality (Semaforo Escuela), and a national teacher survey (ENDO), enabled the mechanisms of impact to be explored.

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Acknowledgements

Young Lives is an innovative longitudinal study following the lives of 12,000 young people in Ethiopia, India (in the states of Andhra Pradesh and Telangana), Peru and Vietnam since 2001. The study is divided into two age groups: 4,000 young people born in 1994 (the Older Cohort, now aged 26) and 8,000 born in 2001 (the Younger Cohort, now aged 19).

The Young Lives COVID-19 phone survey, funded by the Foreign, Commonwealth & Development Office (FCDO) as part of the Young Lives at Work programme, consisted of three phone calls with each of our respondents in all four study countries between June to December 2020, to better understand the impact of the pandemic on their lives and help to inform COVID-19 recovery plans.

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