

## Chapter 4

# Quality, equity and equality in the education system

### Main recommendations

- *Ensure that all teacher education programmes meet well-defined minimum standards.*
- *Upgrade the subject content knowledge of teachers, especially in the upper grades of primary schools, through richer curricula in initial teacher education programmes at universities and at post-graduate programmes for practicing teachers.*
- *Develop an induction programme for novice teachers.*
- *Introduce external exit exams for initial teacher education.*
- *Ensure that student selection is prohibited by schools; consider extending the prohibition to secondary schools and strengthening it by requiring lotteries at oversubscribed schools.*
- *Provide teachers, school managers and parents with sufficient information to read results of the national student achievement test (SIMCE), and complement the test with richer quality indicators, including qualitative information and possibly value-added indicators.*
- *Implement the newly designed quality assurance system, while making sure that the new agencies interact efficiently.*
- *Consider introducing higher subsidies at decreasing rates for several income brackets, and limit top-up payments dependent on parents' income. Over time, consider moving away from shared financing and increase voucher subsidies sufficiently to make up for this.*
- *After significantly expanding access, systematically evaluate quality at preschools and make sure that initial education prepares preschool teachers and aides to enhance children's abilities and learning skills.*

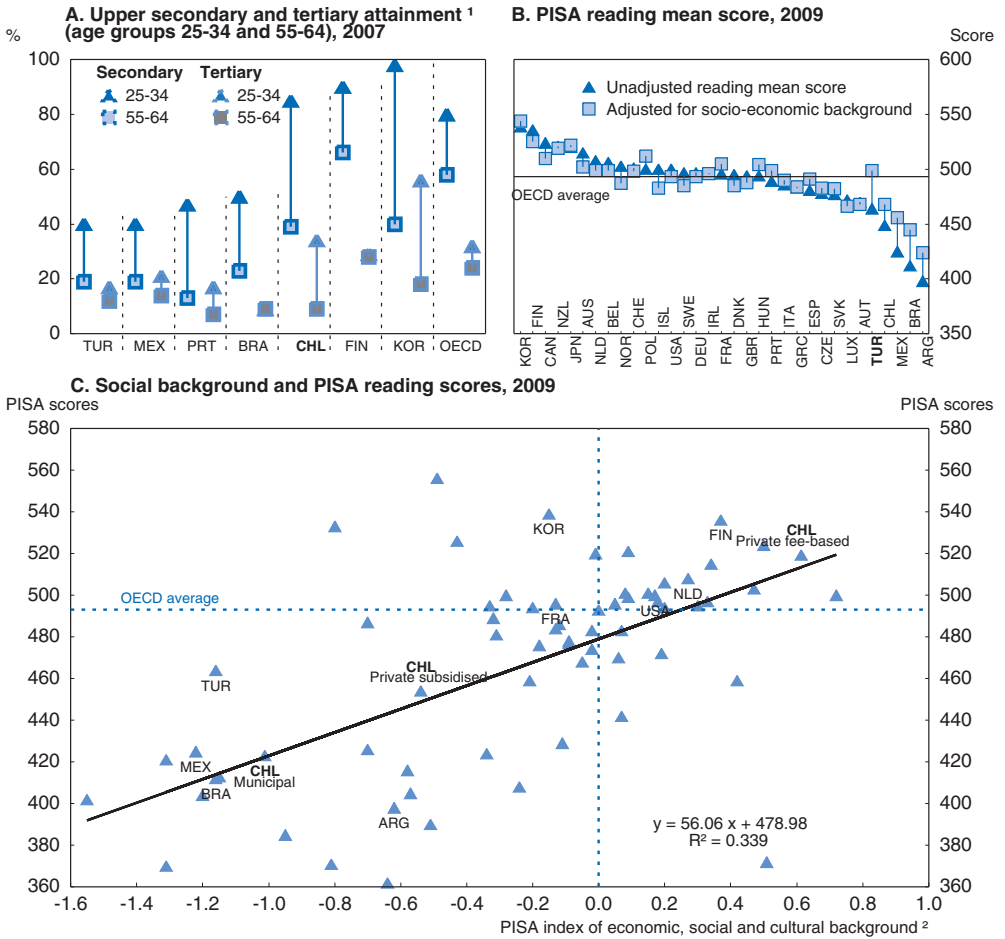
## Educational attainment versus quality

Chile introduced a unique voucher system for school financing in the early 1980s, whereby publicly financed schools receive, for each of their students, a subsidy that was essentially flat until recently. Public schools, which have been run by municipalities since the reform, and private subsidised schools receive the voucher subsidy. Private subsidised schools, but not municipal schools, are allowed to top up the voucher subsidy with fees from parents. If these fees exceed a certain limit, private schools lose their right to the voucher subsidy and are financed by parents' fees alone. This school type is called a private fee-based school. Since the voucher reform, Chile has relied on free school entry and school competition as the main quality assurance mechanism, with, until recently, little or no state intervention to ensure minimum quality standards. The reform has led to the creation of a large number of private subsidised schools, which have increased their share in enrolment from 30% to 48% since 1986, and a flight of the middle classes from public schools, with their enrolment share decreasing from 63% in 1986 to 43% in 2008. As before the reform, a small share of pupils (around 7%), mostly from high-income families, go to private fee-based schools. Private subsidised schools receive students from a wide range of weaker socio-economic backgrounds. Municipal schools receive the poorest children, around 60% of children from the two lowest income deciles.

Chile has made impressive progress in terms of educational coverage and attainment, which is in part related to the large increase in the number of private schools, but quality is still lagging. The coverage of primary education is now almost universal and secondary and tertiary attainment rates have increased rapidly (Figure 4.1, Panel A). Yet while Programme for International Student Assessment (PISA) results improved considerably between 2000 and 2009, the scores of 15-year-olds in science, reading and mathematics are still well below the OECD average, even after adjusting for the lower socio-economic background of Chilean students (Figure 4.1, Panel B).

Equity issues need to be addressed. PISA results decrease sharply by school type in line with the average socio-economic background of the children (Figure 4.1, Panel C). In fact, the socio-economic background explains a large share of the variance of PISA test scores in Chile compared to other OECD countries, indicating that the Chilean school system needs to do more to help disadvantaged children catch up.

Figure 4.1. Educational attainment and outcomes in Chile



1. Excluding ISCED 3C short programmes.
2. The PISA index of economic, social and cultural status (ESCS) summarises various aspects of socio-economic background, including father's and mother's education and occupational status and students' access to educational resources. It is normalised to zero for the OECD average. A higher index value indicates a higher socio-economic background.

Source: OECD (2009), *Education at a Glance 2009: OECD Indicators*, OECD Publishing, DOI: 10.1787/eag-2009-en; PISA Results 2006 Database; *Ministerio de Planificación, Encuesta CASEN 1990 and 2006*.

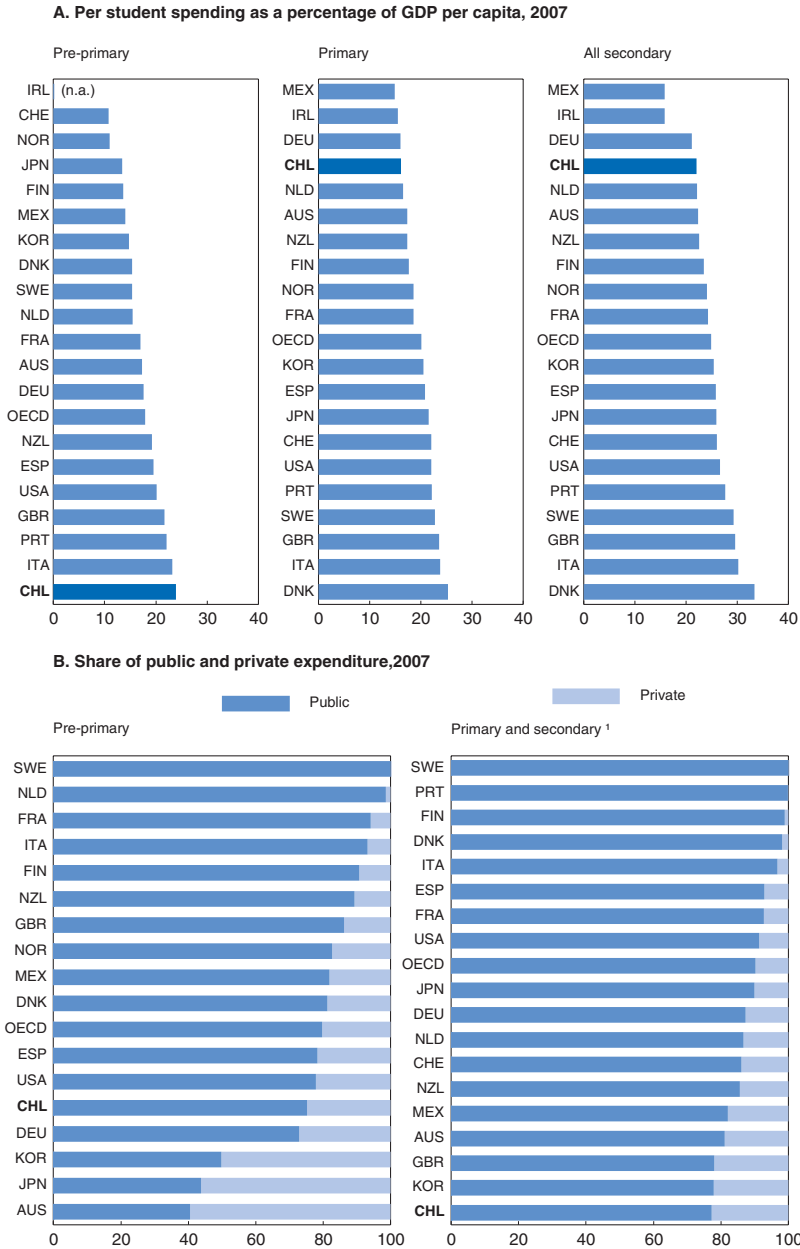
Education spending per pupil is low at the primary and secondary school level (Figure 4.2), although comparatively high at the pre-primary level once adjusted for income. At the same time, the share of private spending is high (Figure 4.2) given the large number of private schools in the system, which levy fees. This indicates that there is a case for dedicating more public funds to education in Chile. Given high income inequality and the strong socio-economic segregation of its school system, Chile needs to do more than other countries to help children with limited financial means.

Chile has taken action in many of these areas. After having achieved much progress in raising educational attainment, it is crucial for Chile to continue improving education outcomes. There is pervasive evidence that learning outcomes, as measured by cognitive skill tests, are much more important than educational attainment in determining economic growth and employment prospects (Hanushek and Wössmann, 2008). Improving results of the poorest children, in particular, would reduce inequalities and do much to lift the average. Raising the quality of its human capital will be important for Chile to increase its productivity growth, raise the employment and earnings prospects of its citizens and reduce income inequalities.

### **Attracting qualified individuals to the teaching profession**

To improve education outcomes for all Chilean children, teaching quality needs to be upgraded. Top performing school systems, such as those in Finland; Hong Kong, China; Korea; and Singapore consistently recruit teachers from the top third of pupils in their school systems (Barber and Mourshed, 2007). While Chile has made substantial efforts in recent years to increase the attractiveness of the teaching profession by raising pay levels and offering scholarships to gifted students who want to enter the teaching profession (OECD, 2004), very few prospective teachers graduate in the top third of the class. A pilot exam recently given by the government-run programme INICIA, which tested basic language, writing and numeracy skills and subject content knowledge of students who are soon to become primary school teachers, revealed deficiencies among many applicants. The Chilean government plans to step up its efforts to attract highly qualified students to the teaching profession by extending scholarships to gifted students who want to study to become teachers, and through marketing campaigns underlining the appeal of the profession.

Figure 4.2. Per-student expenditures in Chile, 2007



1. Includes post-secondary, non-tertiary education.

Source: OECD (2010), *Education at a Glance 2010: OECD Indicators*, OECD Publishing, DOI: 10.1787/eag-2010-en.

Performance-based pay already plays a role in municipal schools, although seniority remains more important. Teachers who make a special effort and who perform well can make up to 40% more (Vegas, 2007). Taking on administrative tasks or working in difficult schools is rewarded with higher wages as well. A thorough teacher evaluation programme (*Evaluación del Desempeño Docente*) with rich qualitative information, including a portfolio, references from the principal and a structured interview, was introduced at municipal schools; teachers with good results can now obtain salary bonuses after taking tests on subject content and pedagogical skills. Those with low scores are offered professional training; in extreme cases, when their performance does not improve, they can lose their jobs. Another evaluation of teacher abilities (*Asignación de Excelencia Pedagógica*), which is available for municipal and private subsidised schools, can lead to bonuses, and teachers who have passed this test can receive extra salary for training other colleagues (*Maestro de Maestros* programme). The corresponding bonuses have recently been increased, in particular for teachers who work in schools with a high share of poor students. This increases the chances these children will be taught by excellent teachers.

There is also a collective performance bonus for teachers in all publicly subsidised (municipal and private subsidised) schools, but this is not without problems. It is awarded mainly based on schools' average results of the *Sistema de Medición de Calidad de la Educación* (SIMCE), a standardised student performance test, adjusted for student socio-economic background. Such adjustment is necessary, as it is a strong determinant of schooling outcomes, while not reflecting the contribution of schools. However, research shows that rankings based on SIMCE results that are adjusted for differences in pupils' socio-economic background resemble a random selection with strong variations from year to year (Mizala *et al.*, 2007). Somewhat more reliable quality indicators could be obtained by generating information on value added. The SIMCE tests have recently been rescheduled to ensure that the same class is tested again after four years, which has not been the case previously. The new schedule will allow the government to construct proxies of value added. Chile could also consider producing individual value-added data by following SIMCE results for each child over time, although this would be expensive. In any case, there is widespread consensus in the literature that measuring teacher performance with quantitative indicators of student outcomes alone risks punishing or rewarding teachers for results beyond their control (Kane and Staiger, 2002), even if value-added data are available. Career progression and pay should therefore be based on qualitative measures of teaching, as well.

To reward excellence in teaching, Chile could create career paths for teachers in publicly funded schools closely linked to performance. Salary increases and interesting positions could be awarded, for example based on the kind of thorough teacher evaluations that have been used at public schools. While this would require extending them to all publicly

funded schools, this might in fact be a desirable step, given that there is scope to improve teacher performance throughout the system. Becoming an instructor who trains other teachers or a mentor for novice teachers could be an important career step to become a principal or school supervisor. This would also ensure that these positions would be awarded to individuals with proven teaching skills and a capacity to help others develop their own, thus putting more emphasis on the instructional leadership role of these functions than on their administrative role.

## Improving teacher education and professional training

While Chile has made progress in improving teacher education, more needs to be done. In publicly funded schools teachers who have completed degrees in accredited programmes now receive bonuses although those who have not are still allowed to teach. Practice for teacher students in schools has been introduced more widely and tutors and mentors for new teachers are being considered and in some cases introduced.

At the same time, accreditation has only recently been made mandatory and has not yet been entirely effective in controlling the quality of teacher education programmes. There are special programmes for initial teacher education, that is, teacher training at universities (*Programas Especiales de Titulación*), which have been shown to suffer from serious deficiencies regarding entry requirements, the quality of their educators and their teaching programmes (Ruffinelli and Sepúlveda, 2005). More candidates are enrolled in these programmes than at the more traditional universities, and this is cause for concern. The government should apply strict accreditation procedures based on well-defined standards that ensure that students learn key skills such as classroom management, teaching methodologies and evaluation of student performance. Programmes that are found to fall short of well-defined minimum standards several times should be closed.

Many students entering teaching programmes still have insufficient literacy and numeracy skills. These programmes could administer entrance exams to assess applicants' literacy and numeracy skills, their motivation and their personal qualities. This practice is common in countries with the highest performing schools systems, including Finland and Singapore. In Chile, this could have a twofold purpose. Very talented students could be enrolled in accelerated programmes to take on leadership roles in education. This has been implemented in Israel and some cities in the United States, and rapid progress in student outcomes has been achieved (OECD, 2005; Barber and Mourshed, 2007). Those with deficient literacy and numeracy skills, but sufficient motivation, could be enrolled in remedial classes. In Chile, this would be preferable to turning students away altogether, as it may not be possible in the short to medium term to attract sufficient numbers of high-ability

students to teacher education programmes. Currently, admission to university for students in all fields of studies is based on their results in a multiple choice test, the *Prueba de Selección Universitaria* (PSU), which measures verbal and numerical skills. The government now offers scholarships to students with excellent PSU results, who want to enter teacher education. This is a step in the right direction. Complementing the PSU with tests that assess students' motivation for teacher education and personal qualities could help identify those who are worthy of entering the field, even though they might need remedial classes to enhance verbal and numerical skills.

Concerns remain regarding subject content knowledge, especially for primary school teachers in higher grades. They are trained as generalists and are not provided with sufficient instruction in mathematics, language and other subjects, even for the lower grades (OECD, 2004). This problem becomes especially acute in the upper grades of primary school. In the public sector, the proportion of seventh grade teachers with only primary school teacher training was 80% in 2006, compared with 55% in the private subsidised sector, and only around 30% in private fee-based schools (Cox, 2007). Chile has recently legislated shortening the primary school cycle from eight to six years. This is welcome, as secondary school teachers with their more specialised training should be better able to teach the required subject content to students in seventh and eighth grades. However, this change will require a large-scale programme for retraining teachers who teach in these grades. There is a small-scale programme that offers a post-graduate degree in specific school subjects for practicing teachers (*Postítulos de Mención*), but this will have to be expanded so the skills of the existing workforce can be upgraded quickly.

At the same time, the curricula in teacher training programmes should evolve to ensure that students acquire sufficient knowledge in subject content. The government should make classroom practice an integral part of initial teacher education and develop an induction programme for teacher novices over time, during which they are trained in classroom practice with support from mentors before taking over full responsibilities as teachers. Such efforts have been shown to reduce attrition rates and help teachers apply their pedagogical and subject content knowledge to the complexity of the classroom (OECD, 2005). Teachers also require more focused training in how to deal with students from very different backgrounds and in how to close learning gaps. Changes in curricula have been financed at 15 institutions that train teachers for grades five to eight. However, it is not clear that this programme has gone far beyond defining competences that student teachers should achieve. It is important that the participating universities improve their curricula accordingly. Moreover, other institutions that train teachers should be encouraged to make similar progress.



One way for the Ministry of Education to ensure the quality of teacher training programmes is to introduce external teacher certification exams. This can become a useful quality assurance mechanism in a system like Chile's where teacher education programmes are perceived to be of varying quality (OECD, 2005). The government is moving in this direction and plans to make the pilot exit exam developed by the programme INICIA mandatory as of 2011, in the sense that public subsidised schools can only hire teachers who have taken the exam. Graduates with good exam results can receive higher starting salaries. Over time, this could be developed into a fully fledged teacher certification exam; only candidates who pass the exam would be allowed to teach. Some transition phase would be needed, but in the longer run only schools that employ certified teachers should be able to obtain a license. A re-certification process for practicing teachers would also be useful.

## More equal conditions for private and public schools to compete

In a system based on competition, the hope is that schools are forced to increase their productivity to help their students learn. In some cases, however, schools compete by selecting more capable students. In Chile there is some evidence that competition has led to sorting. At the same time, PISA results suggest that competition has not brought about sufficient improvements in schooling outcomes. Econometric tests of whether private or public schools are more productive yield conflicting results after accounting for socio-economic background (for a literature overview, see OECD, 2010). In part, the limited impact of competition can be explained by very different conditions in which private and public schools compete.

Until recently private subsidised, but not municipal, schools could select students based on ability or its proxies, such as socio-economic background, favouring competition via selection.

Private fee-based and subsidised schools have much more flexibility regarding teacher employment and pay. Teachers in the public sector have a special status with a high level of job security, and centralised wage negotiations. They are assigned to schools by municipalities with little leeway for principals to influence their workforce. In contrast, private teachers' contracts are governed by labour law.

Private schools with higher fees also have significantly more resources per student than municipal schools or low-fee private subsidised schools located in poorer areas. Yet, teaching poor students mainly falls on the latter two. Research shows that student socio-economic background is among the most significant determinants of learning outcome, while the impact of the socio-economic background of other pupils in the same class can be even stronger (OECD, 2007).

Hence, teaching poor students is difficult and thus costly, in particular when they are concentrated at the same school.

Finally, there is evidence that parents have limited information about school quality (Elacqua and Fabrega, 2004) and access and use of it is dependent on socio-economic background. Poorer parents in particular strongly value school distance from home in addition to school quality (Chumacero *et al.*, 2004; Gallego and Hernandez, 2009). This can lower schools' incentives to raise their quality to attract students.

Chile has taken a number of measures to address these issues.

Selection of students by school based on ability or socio-economic background has recently been prohibited in primary schools, and this is welcome. So is the requirement for schools to allow students to repeat a class at least once before expelling them. Prohibiting selection increases chances that schools compete for higher productivity. The government should ensure that the law prohibiting selection is enforced. Requiring schools with too many students to issue lotteries may be the safest way to avoid selection of higher-ability students. There remains the problem, however, of residential segregation.

The government should also consider prohibiting selection in secondary school admission. Some argue that certain highly selective municipal schools, such as the *Instituto Nacional*, have improved social mobility of children who are admitted to them (González and Mizala, 2006). In fact, the government is creating more of these elite public schools, providing them with extra funds. Research about selective versus comprehensive school systems in the United Kingdom has shown that schooling outcomes of "borderline" children who just make it into selective schools can indeed be very positive, although high-ability students seem to perform just as well in comprehensive schools. Yet, this has to be weighed against negative effects on students who narrowly fail to gain access to these schools (Schagen and Schagen, 2001; Boaler *et al.*, 2001). Rather than keeping the practice of selection, it may be preferable to create a climate of high achievement and aspirations for all children in less segregated schools with better teachers.

The government should also seek to create more equal working conditions and pay for teachers across different school types. While the relative security of the teaching profession could be maintained to make up for lower salaries than in other professions, all schools should have some flexibility over teacher employment and pay. Principals in public schools are now allowed to dismiss some teachers who have received bad evaluations several times in a row.

One important issue is that municipalities are not equally well equipped to run schools. Some of the wealthier municipalities have large and well-trained staff dedicated to technical-pedagogical support of schools, while others can barely afford one employee. A fiscal

equalisation mechanism would be needed to address this issue. Alternatively, the central government could assign additional resources to municipalities or local education authorities to allow them to employ technical-pedagogical support staff for all publicly subsidised schools in the municipality.

## Strengthening the state-run quality assurance system

Chile is taking steps to establish a more regulatory approach to quality assurance in all publicly funded schools. Among successful school systems, such as in New Zealand and Finland, even the most decentralised ones have stronger quality assurance and performance reporting systems than in Chile (World Bank, 2007). Well-functioning quality assurance systems evaluate whether schools and teachers meet minimum quality standards, as in New Zealand, where licenses to operate or teach can be revoked if standards are not met. In other systems, such as in the United Kingdom, Finland and some districts in the United States, the state intervenes actively if schools perform poorly. These controls are largely absent in Chile, but plans are under way to introduce a comprehensive quality assurance system, which is currently discussed in Congress. In the new system the Ministry of Education will continue to be responsible for policy and curriculum. The *Consejo Nacional de Educación*, comprising independent education experts, will approve the curriculum and the standards proposed by the Ministry. A new *Superintendencia de Educación* will be responsible for ensuring school compliance. It will have the power to request the Ministry to designate a provisional administrator for schools that are deficient several years in a row. It will be able to apply other sanctions that could result in the revocation of the school's license. A newly created *Agencia de Calidad de la Educación* will be responsible for independent evaluation of student outcomes and the performance of schools and their administrators. Both the *Agencia de Calidad de la Educación* and the *Superintendencia* are required to make reports available to the public.

These reforms will bring Chile closer to international best practice, but the government should be careful to ensure co-operation among the new agencies. The new arrangement assigns clearly defined responsibilities for each participant in the educational process to different agencies. Reporting requirements for all performance evaluations are now spelled out, as are the consequences for schools falling short of expected standards. However, the number of agencies that will have to co-operate and interact efficiently is rather large. The government should closely monitor their interaction and, if needed, merge some agencies to avoid a duplication of tasks and promote efficiency.

There is a need for more information on school quality that is easier to interpret. Currently, performance review is based primarily on the SIMCE, a standardised student performance test, adjusted for

socio-economic background, which has some weaknesses, as discussed before. The government recently began publishing SIMCE maps on a web page. The maps show whether schools are below, at or above the national average, without adjusting for student socio-economic background. This could well be confusing to the public, because children's socio-economic background, albeit a strong determinant of schooling outcomes, reflects what happens outside the classroom, in particular intellectual stimulation in the family. Publishing SIMCE results adjusted for socio-economic background, as before, would be preferable. In any case, school managers, teachers and parents need more information on how to read SIMCE results, as they are often not able to interpret them (Taut et al., 2009). The work of the new Quality Assurance Agency will provide an excellent opportunity to base performance assessment on a larger set of instruments, including qualitative and possibly value-added indicators, with sufficient explanation for all stakeholders to interpret results.

### Expanding resources for poor children

With high income inequality and a school system that is strongly segregated by socio-economic background, Chile needs to invest more public resources in education than other countries. After having attracted a lot of private resources to the school system, increasing public money that is efficiently spent is likely to have higher returns than increasing private expenditure even further.

Against this background, the government's initiative to raise the base value of the voucher by 15% in 2008, while increasing it substantially for the poorest children, was the right way to go. Schools that apply to the *Subvención Escolar Preferencial* (SEP) receive higher subsidies for poor children with increases up to 50% and some extra payments if the concentration of these children is high. There is a rather stringent quality assurance system, including improvement plans for schools. The government has recently decided to increase the extra subsidy for poor pupils by an average of 20% with even higher increases for the poorest, and this is welcome. This extra money could increase the chances of poor children to receive high-quality education. It will also make education financing less regressive at the lower end of the income distribution.

The government should evaluate results and offer support to schools to ensure that the extra money is spent effectively. There is a need for independent evaluations of methods employed to teach vulnerable students. The government could experiment with some of the new methods with a group of schools or a region to evaluate the efficiency and effectiveness of these tools. Good practices could be identified, and then implemented throughout the system.

One important effort will be to enhance methods to help students at risk of falling behind. In the Finnish education system, which has

consistently high outcomes and equity, well trained teachers identify these at-risk students and give them extra support, either individually or in small groups. If needed, teachers' assistants and trained special education teachers provide extra support under the supervision of the teacher. Close to 30% of the student population receive support in this way each year (Field, Kuczera and Pont, 2007). If all of these measures fail, a multi-disciplinary team comprising teachers, social workers, psychologists and representatives of health and public housing authorities, if necessary, work out a plan of support. In Chile, hiring more special education teachers at schools that receive the extra voucher might be a good use of this money. Offering higher salaries for especially qualified teachers to teach at schools with many poor students should also help. A set of methods called formative assessment, whereby teachers concentrate on student progress towards learning goals, rather than their absolute level of attainment, employs varied instruction methods to meet diverse student needs. This has proven very successful in improving the results of students at risk of failure (Field, Kuczera and Pont, 2007). In Chile, school reinforcement programmes for vulnerable children provided by charity organisations have been effective in improving the grades of at-risk children (Contreras and Herrera, 2007).

The government should also evaluate whether there is scope to develop the SEP further, in order to direct more public resources to more children with limited means. Rather than withdrawing the voucher subsidy depending on the top-up fee that parents pay, the government could make it more generally dependent on income (Beyer, 2009) or on socio-economic background (Sapelli, 2006), by creating several income brackets that would receive an increasingly lower subsidy. To some extent the government has recently moved in this direction by increasing the extra subsidy for poor children with the largest increases for the 20% poorest. In turn, maximum top-up payments could be positively related to parents' income to make free school choice less dependent on the ability to pay. The government could require schools to accept all children with a maximum top-up payment that would be zero for the poorest children, increasing gradually across the different income brackets. Over time, Chile could increase the voucher for all children, while keeping it progressive, to increase public spending on education. Cross-country empirical evidence suggests that a large share of privately operated schools has a positive impact on PISA results, but only if the share of public financing remains high (Wößmann, 2005). In contrast, school systems with a high share of private financing achieve weaker results than others, presumably because they do not do enough to help children of lower ability catch up.

The increased subsidy for vulnerable children could help eliminate the socio-economic segregation of the school system as it becomes more attractive financially to accept poor children. Preliminary evaluations of the scheme have shown, however, that mainly schools that already educate poor students have applied to participate, while more selective

schools have not (Elacqua et al., 2009). The government oversees only those schools that enter the SEP system and accept the extra subsidy, which has created a disincentive to participate. To counter this, the government should require all publicly funded schools to accept the SEP subsidy without extra fees levied on the parents. It should integrate the SEP quality assurance system into the new national quality assurance system for all schools as planned. It is also important to ensure that technical support is conveniently available to schools, even in remote areas.

### **Investing more in preschool education to enhance schooling outcomes and equality of opportunity**

One efficient way to promote schooling outcomes of all children and reduce the impact of socio-economic background on results is to invest more in preschool education. Children from disadvantaged backgrounds receive much less cognitive and emotional stimulation, producing an early gap in ability. Yet, early intervention, *e.g.* high-quality preschool centres and home visits to help parents mentor their children, has been shown to be very effective in strengthening the abilities of disadvantaged children (Heckman and Masterov, 2007). The positive impact of a high-quality preschool education has also been shown to be stronger for children who start with weaker abilities (Connor et al., 2006), indicating that it can be a good way to close learning gaps.

Chile has made important efforts to expand early childhood education capacity, but more needs to be done to ensure quality. Kindergartens and nurseries have been expanded rapidly and subsidies for poor children to attend these institutions have increased. When capacity increases rapidly, however, there is a danger that quality can suffer.

Research suggests that improvements in quality are possible in Chile. Preschool teachers generally have a university education and practical experience in preschool institutions. Many have benefited from additional training programmes. However, preschool programmes can differ significantly, suggesting that there are no standard requirements for preschool teachers. Studies have found that Chilean kindergartens devote very little time to language study and reading (Eyzaguirre and Fontaine, 2008; Strasser et al., 2009). Yet, an emphasis on language has been shown to be one of the most important determinants for a positive impact of early childhood education on the development of children's cognitive skills (NICHD, 2000). Chilean preschools often ignore the special requirements of children from vulnerable backgrounds, as well as interaction with their parents (García-Huidobro, 2006). Developing standards for education of preschool teachers and making accreditation a prerequisite would be important steps. There is also a need to improve the training of auxiliaries practicing at preschools, who assist teachers, because they are often the ones who interact most with the children.



## Further reading

- Barber, M. and M. Mourshed (2007), *How the World's Best-Performing School Systems Come Out on Top*, McKinsey and Co, London.
- Beyer, H. (2009), “¿Qué hacer con la Educación Pública?”, *Estudios Públicos*, No. 114, pp. 89-125.
- Bishop, J.H. (2006), “Drinking from the Fountain of Knowledge: Student Incentive to Study and Learn – Externalities, Information Problems and Peer Pressure”, in E.A Hanushek and F. Welch (eds.), *Handbook of the Economics of Education*, Elsevier, Amsterdam, North Holland.
- Chumacero, R., D. Gómez Caorsi and R. Paredes (2008), “I Would Walk 500 Miles (If It Paid)”, [http://mpra.ub.uni-muenchen.de/15125/1/MPRA\\_paper\\_15125.pdf](http://mpra.ub.uni-muenchen.de/15125/1/MPRA_paper_15125.pdf).
- Contreras, D. and R. Herrera (2007), “Refuerzo Escolar para Niños Pobres: “Funciona?” *El Trimestre Económico*, Vol. 124, No. 1, pp 123-159.
- Elacqua, G. and R. Fabrega (2004), “El Consumidor de La Educación: El Actor Olvidado de La Libre Elección de Colegios en Chile”, PREAL, Universidad Adolfo Ibáñez, Santiago.
- Elacqua, G., U. Mosqueira and H. Santos (2009), “La Toma de Decisiones de un Sostenedor: Análisis a partir de la Ley SEP”, *En Foco Educación* No. 1, Expansiva, Santiago.
- Eyzaguirre, B. and L. Fontaine (2008), *Las Escuelas que Tenemos*, Centro de Estudios Públicos. Santiago.
- Field, S., M. Kuczera and B. Pont (2007), *No More Failures: Ten Steps to Equity in Education*, Education and Training Policy, OECD Publishing, DOI: 10.1787/9789264032606-en.
- Gallego, F. and A. Hernando (2009), “School Choice in Chile: Looking at the Demand Side”, *Documento de Trabajo* No. 356, Pontificia Universidad Católica de Chile, Santiago, Chile.
- García-Huidobro, J.E. (2006), “Formación Inicial de Educadoras(es) de Párvulos en Chile”, *En Foco* No. 80, Expansiva, Santiago.
- González P. and A. Mizala (2006), “Calidad de la Educación Escolar: Donde Está el Problema?”, Departamento de Ingeniería Industrial, Universidad de Chile, Santiago.
- Hanushek, E. and L. Wößmann (2008), “The Role of Cognitive Skills in Economic Development”, *Journal of Economic Literature* Vol. 46, No. 3, pp. 607-668.
- Heckman, J. and D. Masterov (2007), “The Productivity Argument for Investing in Young Children”, *Review of Agricultural Economics*, Vol. 29, No. 3, pp. 446-493.

- Kane, T. and D. Staiger (2002), “Volatility in School Test Scores: Implications for Test-based Accountability Systems”, *Brookings Papers on Education Policy*, Washington, DC.
- Mizala, A., P. Romaguera and M. Urquiola (2007), “Socioeconomic Status or Noise? Tradeoffs in the Generation of School Quality Information”, *Journal of Development Economics*, Vol. 84, No. 1, pp. 61-75.
- National Institute of Child Health and Human Development (NICHD) (2000), “The Relation of Child Care to Cognitive and Language Development”, *Child Development*, Vol. 71, No. 4, pp. 960-980.
- OECD (2004), *Reviews of National Policies for Education: Chile 2004*, OECD Publishing, DOI: 10.1787/9789264106352-en.
- OECD (2005), *Teachers Matter: Attracting, Developing and Retaining Effective Teachers*, Education and Training Policy, OECD Publishing, DOI: 10.1787/9789264018044-en.
- OECD (2007), *PISA 2006: Science Competencies for Tomorrow’s World: Volume 1: Analysis*, PISA, OECD Publishing, DOI: 10.1787/9789264040014-en.
- OECD (2009), *Education at a Glance 2009: OECD Indicators*, OECD Publishing, DOI: 10.1787/eag-2009-en.
- OECD/The World Bank (2009), *Reviews of National Policies for Education: Tertiary Education in Chile 2009*, OECD Publishing, DOI: 10.1787/9789264051386-en.
- OECD (2010), *OECD Economic Surveys: Chile 2010*, OECD Publishing, DOI: 10.1787/eco\_surveys-chl-2010-en.
- OECD/The World Bank (2010), *Higher Education in Regional and City Development: Bío Bío Region, Chile 2010*, Higher Education in Regional and City Development, OECD Publishing, DOI: 10.1787/9789264088931-en.
- World Bank (2007), “Chile – Institutional Design for an Effective Quality Assurance”, Report No. 39830-CL, The World Bank, Washington, DC.
- Sapelli, C. (2006), “Desafíos del Sistema Educativo: la Subvención Preferencial”, *Temas de la Agenda Pública*, Vol 1, No. 1. Pontificia Universidad Católica de Chile, Santiago.
- Strasser, K., M. R. Lissi and M. Silva (2009), “Gestión del Tiempo en 12 Salas Chilenas de Kindergarten: Recreo, Colación y Algo de Instrucción”, *Psykhe*, Vol. 18, No. 1, pp. 85-96.
- Taut, S., et al. (2009), “Evaluating School and Parent Reports of the National Student Achievement Testing System (SIMCE) in Chile: Access, Comprehension, and Use”, *Evaluation and Program Planning*, Vol. 32, No. 2, pp. 129–137.



- Vegas, E. (2007), “Teacher Labor Markets in Developing Countries”, *The Future of Children*, Vol 17, No. 1, pp. 219-232.
- Wößmann, L. (2005), “Public-Private Partnerships in Schooling: Cross-country Evidence on Their Effectiveness in Providing Cognitive Skills”, *The Program on Education Policy and Governance Research Paper 05-09*, Harvard University, Cambridge, Massachusetts.



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