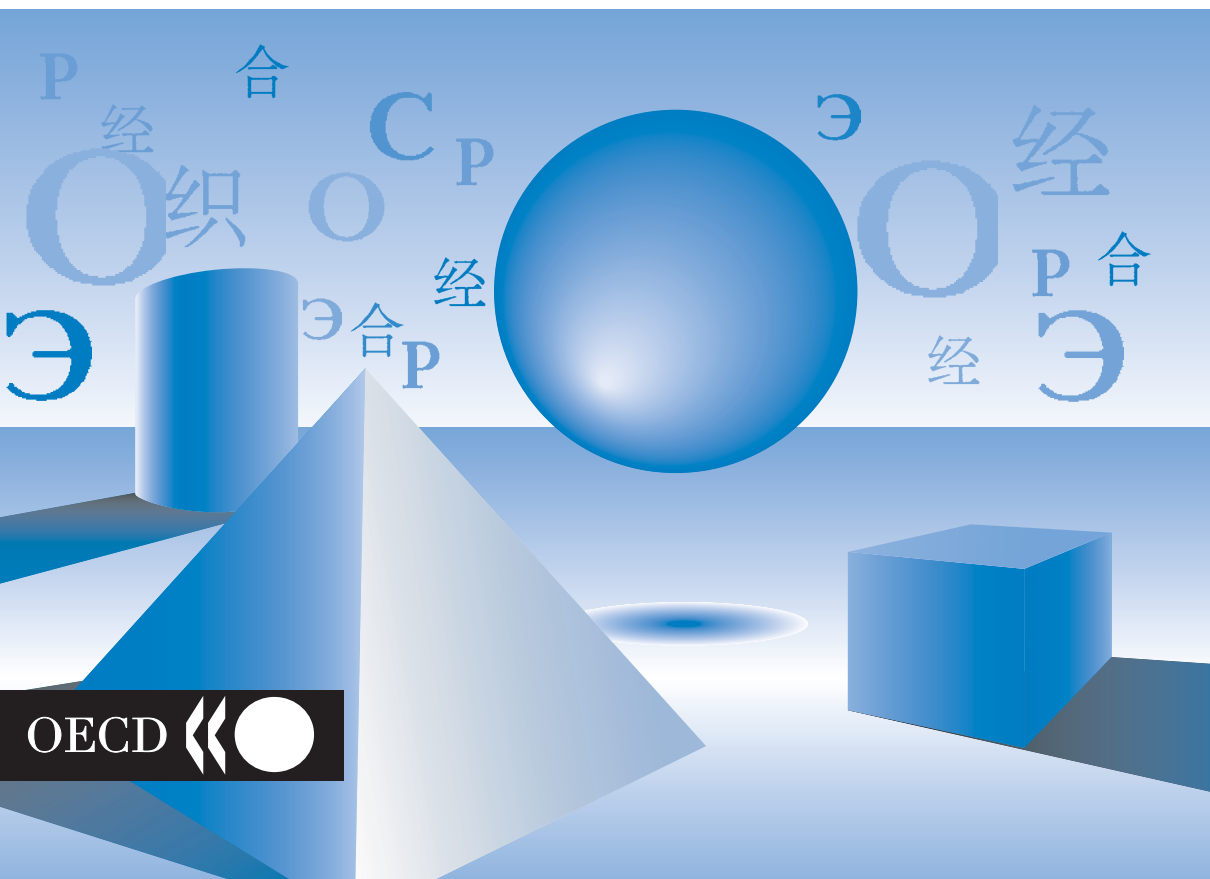


Reviews of National  
Policies for Education

EMERGING  
ECONOMIES  
TRANSITION



**Chile**



CENTRE FOR CO-OPERATION WITH NON-MEMBERS

## Reviews of National Policies for Education

# Chile



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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## FOREWORD

Chile embarked on wide ranging social and economic reforms in 1990 and the talents, skills and knowledge base of the Chilean population are crucial in this process; hence the ambitious scale of the reforms for education of the last decade. Education has been a central priority of Chile since the return of a democratic government in 1990. Chile has been a leader in Latin America for improving the quality of and access to education at all levels of the system.

This report offers a comprehensive picture of the significant progress in education reform during the last decade. Changes have occurred in the contents of instruction (a new structure and content of curricula), the system of education, institutions (a new vocational school network and a wider range of tertiary education opportunities), education provision (extension to a 12 year compulsory cycle and a 6 hour school day), improved textbooks, use of technology (a very sophisticated distance education system and provision of ICT equipment to schools), teacher policies (upgrading of pre-service teacher training linked to important salary increases for teachers), and a wide range of programmes to increase access to education for minority and lower income populations. The OECD report provides an overview of the impressive forward thinking and steadfast application of education reform in Chile, and supports these national strategies and offers advice on issues of access, equity, quality, ICT and decentralisation of management and financing responsibilities.

Against the background report prepared by the Chilean authorities (Part I of this volume) and information supplied in meetings in the course of site visits (Antofagasta, Calama, San Pedro de Atacama, Temuco, Nueva Imperial and Concepción), the examiners' report covers the entire system of Chilean education from pre-school through tertiary education and lifelong learning for all. The report gives an analysis of these sectors in light of the economic, social and political context of Chile. The final chapter brings together in the form of a synthesis those specific recommendations and sets out how policies can and should be addressed system-wide, linked to priority issues of access and equity, student evaluation, pre- and in-service teacher training, and efficient use of resources.

This review of education policy was undertaken within the framework of the Latin American Regional Programme of the OECD Centre for Co-operation with Non Members (CCNM) and was financed by the Chilean authorities with additional in-kind assistance from Ontario, Canada. The conclusions and recommendations were discussed at the Education Committee on 27 October 2003 in Paris. The Chilean delegation was headed by Minister Sergio Bitar and included Cristián Cox, Pablo Gonzales, Ignacio Jara and Ana-María Quiroz.

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This volume is published on the responsibility of the Secretary-General of the OECD.

Eric Burgeat  
Director  
Centre for Co-operation with Non-Members

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*Part One*  
**EVALUATING CHILE'S EDUCATIONAL POLICIES 1990-2003**

Background Report Prepared by the Chilean Authorities



## PREFACE

The government of Chile values highly the external assessment of its policies and results. The evaluation by OECD will be a key contribution to face the new challenges with success. The *Background Report* prepared by the Ministry of Education of Chile is a tool to facilitate the examination by the OECD of Chile's educational system and policies. The report aims to describe educational policy during the last decade and to identify the principal problems the nation's educational system faces at present.

Since 1990, during the transition to democracy, which ended 17 years of military rule, Chile introduced policies intended to reform its educational system in an effort to substantially improve both its quality and equity. To achieve these goals, democratic governments increased the role of the state, defining priorities and providing leadership for the development of education (adopting the role of educational *promoter*). Three governments<sup>1</sup> have pursued a consistent educational policy from 1990 to 2003, combining state and private resources in a way that has characterized the development of the educational system of this country.

In this period, expenditure on education (both public and private) increased from 3.8 to 7.4% of GNP, school enrolment rose by 20.4% and enrolment in higher education by 93%. Time spent in school increased dramatically, as a result of major investments in infrastructure which allowed to change school work from a half day, to an extended school day, thus replacing the two shifts that occupied the same school building. Additionally, the material basis for learning was upgraded through universal provision of textbooks and ICT, and a profound reform was undertaken of the curricula from pre-school through grade 12. Also teachers' conditions were improved: a salary increase over a 130% in real terms; and a systematic effort to expand in-service training. These changes have taken place in a gradual and in a consistent manner way. Both a long-term political agreement regarding the direction of educational reform, as well as a harmonious relationship with teaching unions have helped to implement the new educational policies.

---

<sup>1</sup> President Patricio Aylwin (1990-1994), President Eduardo Frei (1994-2000), and President Ricardo Lagos (2000-2006).

Thanks to the policies applied in the 1990's, the beginning of the 21st century opens larger opportunities to achieve new major goals: improve equity, reinforce teacher training, and upgrade coverage and quality in higher education.

Sergio Bitar  
Minister of Education

## Chapter 1

### THE EDUCATIONAL SYSTEM IN THE 1990s: ORGANISATIONAL STRUCTURE, POLICIES AND RESULTS

This chapter deals with Chile's school system in the 1990s, its organisational structure, enrolment, administrative categories, public and private funding. It explains the structure, coverage, and financing in higher education, together with equity and quality issues and curricular reform at this educational level. The educational policies in the 1990s are described considering both continuity and change of how educational reform came about. An overview of the different policy dimensions and components to improve quality and equity is presented, followed by a description of the three strategic components involved in changing learning opportunities, which include *Enlaces*, the reform's information technology programme, curriculum reform and the extension of the school day. There is an analysis of the results of the policies of the 1990s that takes into account access and coverage, changes in teaching practices and learning results.

**Chile's school system: structure, enrolment, administrative categories, public and private funding.**

#### *Structure*

Chile's school system has an 8-4 structure: eight years of primary education are compulsory for pupils aged six to 13 years old. These are followed by four years of secondary education, which until 2003 were not compulsory for pupils between the ages of 14 and 17. (*A reform to the Constitution, passed in May 2003, which will come into effect in 2004, will make 12 years of education mandatory*).

The traditional division between general and vocational education, which divided secondary education's four years – with students starting their vocational specialisation at the age of 14 – was redefined by a curricular reform in 1998. This reform extended the general education curriculum to ten years (or the second year of secondary education) for all students. The last two years of secondary education in the K-12 sequence are organised in two different modalities: humanistic-scientific, with 56% of total secondary enrolment and professional-technical, with 44% in 2001.

The pre-school education system serves children up to the age of five through a variety of institutions, both public and private. It is not compulsory and children four and five years old are the main users: in 2001 coverage for these ages reached 67.6%.

### ***Enrolment***

Table 1 provides a summary of total enrolment in the primary, secondary and tertiary levels of the educational system and the coverage for the corresponding age groups (6-13 years; 14-17 years and 18-24 years) in 1990 and 2001.

Table 1. **Chilean educational system enrolment and coverage, 1990-2001:**

Primary, secondary and tertiary education

Year	Enrolment			Coverage		
	Primary <sup>1</sup>	Secondary	Tertiary	Primary	Secondary	Tertiary
1990	2 022 924	719 819	249 482	91.3	80.0	14.4
2001	2 361 721	850 713	452 347	97.0	85.0	28.4
						(2002)

1. Primary education: eight years. Secondary: four years; Tertiary: a three-tier higher education system (technical colleges bestowing two-year degrees; professional institutes granting four-year degrees; universities offering five-year degrees).

Source: Ministry of Education, 2003.

### ***Administrative categories of schools***

Schools are defined by their administrative and funding relationships, in the following categories (created by the 1981 decentralising and privatising reform):

- *Municipal* schools are administered by Chile's 341 municipal governments, using either of two possible systems: municipal education administrative departments (DAEM) or municipally controlled non-profit corporations. The administrative departments (of which there are 288) answer directly to the mayor and are subject to more rigid rules regarding personnel management. The municipal corporations (totalling 53) are governed by less strict rules regarding personnel hiring and resource use. Eighty percent of municipalities manage education through DAEMs.

- *Private subsidised* schools are financed through an attendance-based, per-pupil public subsidy or grant.
- *Private paid* schools receive no government subsidies and operate entirely on parental contributions.
- *Corporation schools* are vocational high schools managed by business corporations with government funding, especially established for this purpose (not a per-pupil subsidy).

The relative sizes of these categories, in terms of enrolment and trends in the past decade appear in Table 2.

Table 2. **Enrolment by school administrative categories,**  
Percentages, primary and secondary, 1990-2001.

	1990	1995	2001
Municipal Education	58.0	56.8	53.1
Private, state-subsidised education	32.4	32.5	36.6
Private, paid education	7.7	9.2	8.8
Corporation schools	1.9	1.6	1.5

*Source:* Ministry of Education, Estadísticas de la Educación (Education Statistics), 2001. Santiago, 2002

## ***Funding***

Public expenditure on education in Chile went from 2.4% of Gross Domestic Product in 1990 to 4.4% in 2001, rising on average more than 6% yearly. Education's prime importance to individuals and the new Chile was clearest in the magnitude of the new resources invested in this sector, as Table 3 reveals. Public expenditure in education almost tripled, going from USD 907.8 million to USD 3.017 billion (in constant dollars) from 1990 to 2002; per student spending rose accordingly.

In the 1990s, private expenditure, mainly by families and particularly on post-secondary education, rose substantially. The country's total expenditure on this sector rose significantly from just 3.8% of GDP in 1990 to 7.4% of GDP in 2000, as shown in Table 4.



Table 3. **Public expenditure on education; spending per student, by level, 1990-2002**

YEAR	Public expenditure on education USD million 2001	Public expenditure on education:		Ministry of Education spending per student		
		a) percentage of GDP		Each year, by educational level (in USD from the year 2001)		
		b) percentage of total public expenditure		Primary	Secondary	Post-Secondary
		a	B			
1990	940.3	2.4	12.5	231.8	213.8	832.3
1991	1 035.5	2.6	12.6	244.8	216.5	1 109.3
1992	1 176.4	2.7	13.7	270.1	270.7	1 111.9
1993	1 328.5	2.8	13.9	302.8	296.3	1 097.4
1994	1 461.3	2.9	14.6	325.5	324.5	1 148.0
1995	1 620.2	2.9	15.3	371.0	396.3	1 180.0
1996	1 840.6	3.2	15.8	402.3	441.1	1 240.1
1997	2 017.8	3.4	16.5	443.4	494.3	1 319.5
1998	2 214.7	3.7	17.0	480.5	546.0	1 333.0
1999	2 412.3	4.0	17.4	518.7	550.0	1 417.1
2000	2 617.8	4.1	18.1	539.5	609.6	1 374.0
2001	2 788.8	4.4	18,5	582.8	623.5	1 360.5
2002	3 017.7	n.d.	n.d.	n.d.		
<b>% growth in per student spending</b>				151.4	191.7	63.5

Source: Ministry of Education, *Estadísticas de la Educación* (Education Statistics), 2001, Table 4.5, pg. 131.

Table 4. **Total expenditure on education (1990–2001, as a percentage of GDP)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Public expenditure on education/GDP	2.4	2.6	2.7	2.8	2.9	2.9	3.2	3.4	3.7	4.0	4.1	4.4
Private expenditure on education /GDP <sup>2</sup>	1.4	1.4	1.6	1.7	2.0	2.0	2.5	2.3	2.6	3.2	3.3	n.d.
Total expenditure on education/GDP	3.8	4.0	4.3	4.6	4.8	4.9	5.7	5.7	6.3	7.2	7.4	n.d.

2. Private expenditure: estimation based on information from the Central Bank, National Accounts Department.

Source: Ministry of Education, *Estadísticas de la Educación* (Education statistics), 2001, Table 4.1, pg.127.

## **Structure, coverage and issues in higher education**

### ***Institutions***

There are three types of institutions of higher education in Chile: universities, professional institutes and technical training centres. The legal structure that governs these institutions derives from a series of decrees promulgated during the 1980s and a Constitutional Law for Education (LOCE) passed in March 1990, at the very end of the military regime.

The aforementioned legal structure permitted the creation of private post-secondary institutions and thus over time produced a significant increase in the size of the academic market. At present there are 16 state universities and 9 private universities that receive direct state subsidising which together form the Council of Rectors; as well as 37 private universities that do not receive public funding but are non-profit organisations. Professional institutes (48) and centres for technical training (115) are privately owned and can be profit-seeking establishments.

### ***Coverage***

Over the last few decades enrolment in higher education has expanded notably, from 250 000 students in 1990 to more than 500 000 students in 2002. During this same period, young people between the ages of 18 to 24 years old enrolled in higher educational institutions increased from 12% to 31.5%.

The greatest increase in coverage has taken place amongst students belonging to the lower and middle classes: the gap between students in differential income quintiles has decreased from 10 to 7 times between 1990 and 2002.

Amongst higher educational institutions it is the universities that have seen the most noticeable increase in enrolment (180%); professional institutes have had a sustained growth in enrolment though at a slower rate (128%); whilst centres for technical training have reduced their enrolment by 21%.

A constitutional reform recently passed in Congress ensures twelve years of free and compulsory schooling for all Chilean children, in combination with the rising demand amongst secondary graduates to continue post-secondary education, indicates that in 2010, more than 800 000 students will be enrolled in higher education.

## *Equity*

In order to ensure that all young, talented Chileans have access to higher education, measures have been taken to improve and make increasingly available to lower income students subsidies, scholarships and financial aid. Credit is available at a subsidised interest rate (2%), payment is tied to income (5%) and students enjoy two no pay-back years immediately after graduation. This form of financial support has increased by 85% since 1990 and benefits university students attending member institutions of the Council of Rectors. At present a bill is under discussion in the national legislature to make credit available to students enrolled in private universities, professional institutes and technical training centres.

## *Quality*

MECESUP (Improvement of Quality and Equity in Higher Education) is a programme that began in 1997 that aims to complement the educational reform process underway since the early 1990s. It is divided into four components: Quality Assurance, Institutional Strengthening, the Competitive Fund, and Advanced Technical Training Programmes. MECESUP's financial resources (USD 245 000 000) are guaranteed by the Chilean Government and a loan from the World Bank.

MECESUP has put special attention into improving the quality of teaching in graduate and post-graduate courses, in particular by strengthening existing doctoral degree programmes and promoting the creation of new doctoral programmes in areas considered strategically important in terms of Chile's capacity to compete. Since 1999, the number of doctoral programmes as well as the number of students enrolled in them has increased by 50%. Recently the government signed an agreement with the World Bank to encourage research in science and technology, as another effort to foster the process of expansion and improvement in the quality of post-graduate studies.

Over the last four years efforts have been made to institutionalise what has until now been mostly an experimental process in the accreditation of undergraduate studies and more recently of higher educational institutions, in the name of the National Undergraduate Accreditation Commission. In order to grant this Commission with legal status, a bill has been sent to Congress that proposes the creation of a National System of Quality Assurance in order to promote and ensure standards of excellence in post-secondary studies and to guarantee that accurate information is publicly available in this increasingly complex and diverse system.

## ***Financing***

Support by the State to higher education has doubled since 1990, with a real increase of 137%. The largest increases are in financial support and aid to lower-income students aimed at providing them with access to higher education and by “the competitive funds” (*fondos concursables*) used to strengthen the quality of teaching.<sup>2</sup>

## ***Curricular reform***

Chilean higher education is characterised by its undergraduate professional curricula considered by many to be inflexible and to last too long (5 years or more). Mobility is practically unheard of and student desertion rates are very high. Currently, the government is trying to facilitate the legibility of degrees and professional titles, to favour the mobility of students, academics and professionals, and to improve the competitiveness of higher educational institutions in international terms with an eye to improving their quality more generally. The government has attempted to support those curricular reforms which will permit gradual change as well as those that are in accordance with curricular developments taking place at the international level.

## **Educational policies in the 1990s**

In the early 1980s, Chile’s military government (1973-1990) profoundly transformed the administrative and financial model applied to the school system. In the context of an authoritarian political regime with sweeping powers and through a radical structural reform, the regime decentralised school administration, introduced financing instruments based on subsidising demand, eliminated teachers’ status as public employees, and used legal instruments and market incentives to stimulate the creation and growth of state-funded private schools. In 1990, after more than a decade and a half of authoritarian policies and a decade of neo-liberal economic policies, a democratic government led by a centre-left political alliance began to apply a new agenda to education policies, providing a protected, national level statute to teachers. The new agenda has focused on the objectives of *quality and equity in terms of contexts and the school system’s learning outputs*. Its implementation has depended on the State not only ensuring the minimum conditions for education’s functioning (subsidiary role), as it did in the 1980s, but also defining and conducting policies for developing this sector (leadership role).

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<sup>2</sup> Up to date information regarding higher education is available at [www.mineduc.cl](http://www.mineduc.cl).

Considered as a whole, education in Chile in the last two decades of the 20<sup>th</sup> century involved strong state intervention within two very different paradigms: one market driven, based on *choice models*, and the other state driven, based on *integration models*.

The democratic government, which came to power in March 1990 after 17 years of military government, inaugurated a range of educational policies to be implemented from then until 2003 by three governments and seven education ministers.<sup>3</sup> They initiated and applied policies guided by a single vision of quality and equity in education, using a shared repertoire of criteria to inform their actions and applying the same state and market instruments.

### ***Continuity and rupture***

The government that guided the transition to democratic rule made a strategic decision not to reverse the “municipalisation” process or change the financing mechanisms and model established in 1981. It did so despite expectations to the contrary among teachers due to the authoritarian origins and methods originally used to apply these changes. At the same time, the new administration’s overriding policy goal became to substantially improve the quality and equity of publicly financed education. This meant redefining the state’s role in this sector: from a *subsidiary* role, which consisted of assigning resources and supervising educational institutions where competition for enrolment produced specific standards of achievement and patterns of social distribution, to a *proactive* role, working towards quality objectives throughout the system and specific equity-related goals. The latter involved a dual approach that shaped all policies in the 1990s and thus redefined the nature of public action in education: this included universally applied, comprehensive programmes to improve learning and specific, compensatory programmes, focusing on primary and secondary schools for disadvantaged groups with poor learning results, to improve equity.

### ***Policy dimensions and components***

Table 5 offers an overview of the set of policies applied to improve and reform educational quality and equity in the 1990s. These have been organised into three areas, according to the components of the educational system affected and the actors and institutional measures involved.

---

3 Ministers of Education: Ricardo Lagos, Jorge Arrate, Ernesto Schiefelbein, Sergio Molina, José Pablo Arellano, Mariana Aylwin and Sergio Bitar.

The first sphere (columns 2 and 3 in Table 5) presents the economic and political conditions that define the framework in which the school system of the period functioned. This aspect involves four key factors: a) *the governmental policy vision or paradigm in this sector*, b) *the level of agreement or conflict about educational policy*; c) *the level of expenditure and distribution among levels within the sector*; and d) *the State's relationship with teachers* (the key to sector governance).

From the perspective of the institutions and key players involved, this dimension is the most politically sensitive of the three, as well as having complex economic implications. The key components in this sphere included: a) the shift in the policy-organising paradigm away from the subsidiary and toward the proactive State; b) the national vision defining the high priority of education, the framework of agreements and the low degree of conflict that accompanied and defined policies of the period, elements which all coalesced into a politically plural and very influential national commission for modernising education, convened by the President of the Republic in 1994 (*Comisión Nacional de Modernización*), 1994; c) the sustained growth in spending on education, both public (from USD 907 million in 1990 to over USD 3.017 million in 2002) and private (from 1.8% to 3.3% of GDP), and expressed in the laws on shared financing and educational donations (1993); and d), the laws defining the teachers' status, from 1991 and 1995, and the evaluation and individual incentives to the best teachers (2001).

The second policy sphere (column 4 in Table 5) involves direct intervention to improve learning quality and equity. From the perspective of its development and implementation, this sphere reveals a simpler political economy falling entirely within the educational field, where there is no confrontation of interests. This sphere involved ten programmes developed and applied throughout the decade: two integrated universal coverage programmes that combined investment in material inputs with interventions to create or strengthen skills and processes; four programmes focusing on needy primary and secondary schools; three programmes focusing on teachers; and one programme for introducing information technology throughout the school system. A description of their contents, amounts and coverage appears in Table 6.

A third sphere (column 5 in Table 5) involves policies dealing directly with learning quality, but unlike specific improvement programmes these are compulsory throughout the system and affect structural aspects. These are the reform components themselves: the change in the school day, which began in 1997, and the curricular changes that began in 1996. For both components the political context and the financing were more complex, as they required laws

and agreements between government and opposition, in the case of the full school day; highly participatory processes and inter-institutional mediation (Ministry of Education and Higher Education Council) in the case of the curriculum.

The most outstanding feature overall is the continuity of this process: the constant movement toward specific changes that became increasingly complex, but always remained within a single, coherent strategic framework, which ensured a consistency unusual in state activity in this sector.

From the perspective of how educational change came about, another feature running through the whole reform is the significant role played by educational research, combined with special openness to comparative evidence from abroad, on the one hand, and wide-ranging consultation processes, on the other, particularly regarding curriculum reform.

### **Three strategic components involved in changing learning opportunities**

Altogether, the effort to expand and substantially raise the quality of learning opportunities offered by the school system is comprised of three strategic components: the *improvement programmes*, mentioned above, which have unfolded since 1990, including the gradual introduction of *Enlaces*; and two components applied since 1997: *curricular reform* and *extension of the school day*.

#### ***The Enlaces (Links) Project: the reform's information technology programme***

Between 1990 and 2003, Chile invested USD 160 million in introducing information and communication technologies (ICT) into the school system. To summarise achievements to date, 92% of students at publicly funded schools have a computer room at their school, 85% also have Internet access, and 76% of Chile's teachers have received basic training in information technology for education.

The development of the *Enlaces* network has involved providing a broad base of infrastructure (equipment, networks), contents (educational portal, software) and teachers' skills to the country's schools, in line with project goals and the resources available.

Table 5. Summary of educational reforms and policies from the 1990s–budgets in constant USD from the year 2001

Government	Year and budget	Conditions: Labour, financial and legal framework	Programmes for improving quality and equity of schooling	Reforms: School day and Curriculum
Presidency of Patricio Aylwin (1990-1994)	1990 Budget: USD 907 million	Change of educational policy paradigm: responsible, leadership role for the State; education for quality and country competitiveness; equity, affirmative action. Teachers' Statute (No. 1)	900 schools programme	
	1991 Budget :USD 1 035 million			
	1992 Budget: USD 1 176 million		MECE-primary schools (1992-1997)	
	1993 Budget: USD 1 328 million	Shared Financing: Tax incentives for donations to education.		
	1994 Budget: USD 1 461.3 million			
Presidency of Eduardo Frei (1994-2000)	1995 Budget: USD 1 620.2 million	Consensus-building: national commission for modernising education; agreement among political parties on an Educational Agenda Teachers' Statute (No. 2); more flexible; collective performance incentives (SNED)	MECE-secondary schools (1995-2000)	
	1996 Budget: USD 1 840 million		Fellowships for teachers to study abroad	New curriculum for primary education
	1997 Budget: USD 2 017 billion		Montegrande project. Massive application of <i>Enlaces</i> . Teacher reinforcement; initial training programmes; training in new curriculum.	Law for the full school day. National survey on the new secondary education curriculum.
	1998 Budget: USD 2 214 million			New curriculum for secondary education
	1999 Budget: USD 2 412 million			
Presidency of Ricardo Lagos (2000)	2000 Budget USD 2 617 million	Ministry – Teachers' union agreement: individual performance incentives Law to improve wages; teachers' network; individual performance assessment.	Focused strategy to reduce drop-out rates from secondary education (high school for all)	New curriculum for pre-school education
	2001 Budget: USD 2 788 million			
	2002 Budget: USD 3 017 million	Voluntary system for evaluation of teachers of excellence is put in place.	Reading, writing and mathematics in kindergarten and the first four years of schooling campaign	
	2003	Reform to the Constitution: extension of compulsory education to 12 years		

Source: C. Cox, 2003, Table 4



## Teacher training

*Enlaces*' arrival in the schools focuses on teacher training, because the educational use of ICT crucially depends on teachers. Computers' and Internet presence alone will not necessarily have any impact on education. As instruments, their use with school subjects is what matters, not their technical principles. This is counter to the approach of studying computers as an end in themselves and it also tones down the focus on technology in the school, reaffirming that the essential nature of teaching and learning processes depends on people's working relationships and not machines.

**Table 6. Programmes for improving educational quality and equity:**

Components, coverage and annual resources

Universal	Programmes	Components and/or distinctive strategy	Units covered	Coverage (a)	Average annual resources (b)
	Primary education MECE 1992-1997	Infrastructure: PME (c), Rural (d), <i>Enlaces</i> , Pre-school, Text books, Classroom libraries, Educational material, School health care	8,000 primary schools	100% primary school enrolment	USD 32 million
	Secondary education MECE 1995-2000	<i>Enlaces</i> , textbooks, libraries, PME, professional working groups, young people, infrastructure, technical assistance network.	1 350 general and technical secondary schools	100% secondary school enrolment	USD 34.5 million
Focused	P-900 1990- post 2000 Primary education	Learning workshops and community monitors, materials and technical assistance focusing on language and mathematics, teachers' workshops, support for school management.	1 200 primary schools	11% primary school enrolment	USD 4.8 million
	Rural Education 1992 – post 2000 primary education	Support for rural schools with one, two or three teachers, local training opportunities, "micro-centres", <i>ad hoc</i> curricular and educational material for the rural medium.	3 285 small rural schools	5.9% primary school enrolment	USD 3.2 million
	Montegrande 1997-post 2000 secondary education	Substantial resources and technical assistance for an innovative institutional project. Administrative autonomy.	51 secondary schools anticipating reform	5.4% secondary school enrolment	USD 6.4 million

	High school for all, 2000-2006 Secondary education	Educational support and special assistance to reduce drop-outs and improve learning.	432 secondary schools suffering from educational and social poverty	33% secondary school enrolment	USD 3.5 million
Teacher training	Initial teacher training 1997- 2002	Substantial resources for a project involving institutional and curriculum renewal at teacher training centres.	17 education faculties	79% of enrolments of teacher training institutions	USD 4.9 million
	Fellowships abroad, 1996-post 2000	Fellowships to study abroad for six to eight weeks and six-month diplomas, 3 months abroad and 3 in Chile.	800 teachers per year	3.8% total teachers from 1998-2001	USD 5.4 million
	Curricular training 1998-2002	Training in new studies programmes by universities.	44 000 teachers per year	100% of teachers involved in implementing the new curriculum (1997-2002)	USD 7.5 million
Information technology	<i>Enlaces</i> ("Links") 1992 – post 2000	Computer laboratory per school, two-year training for the teaching team, university network providing technical assistance.	8 300 primary and secondary schools	92% of total enrolments of publicly funded system (2003)	USD 20.1 million

Source: C. Cox, 2003, Table 9.

(a) Figures for coverage refer to subsidised enrolment (excluding the paid sector, which accounts for about 8% of total).

(b) USD million, 2000.

(c) *Programas de Mejoramiento Educativo (PME)* Projects for educational improvement assigned through an annual competition.

(d) The Rural, *Enlaces* and PME programmes began as part of MECE-primary and continued on their own.

This strategic option – teachers first – has meant that each school joining the *Enlaces* network participates in a two-year training plan with up to 20 teachers. This is carried out in the school and is followed by long-term, technical-pedagogical support. This assistance includes support for teachers who act as *Enlaces* “Co-ordinators” in each school and visits to maintain computer room equipment and resolve other administration and maintenance issues.

### *Technical assistance network*

*Enlaces* has developed an alliance with universities to create an extensive technical assistance network, which is responsible for planning and managing teacher training and offering technical-pedagogical assistance to schools

throughout the country. In 2003, this network included 24 universities, 800 teacher-trainers and more than 150 technicians, who participated in training and providing technical assistance to 8 300 schools throughout Chile.

### *Equipment*

*Enlaces* provides computers, furniture, software, data networks and electricity, which are set up in a dedicated room in each school. In most schools the initial number of computers provided by *Enlaces* has not been sufficient to ensure that every student in a given classroom has access to computers at the same time. Teachers point to this as one of the main limitations on their use, because this forces the teacher to separate the course into two groups. In this context, the schools themselves have increased the number of computers significantly, so that today of every 13 computers available to teachers and students, on average just seven were provided by *Enlaces* and six were acquired directly by the school itself.

Along with hardware, providing educational software is an essential part of equipping schools. In total, *Enlaces* has provided over 275 000 copies of educational software covering different subjects from the curriculum.

### *Networks*

Although networks were an emerging technology in the early 1990s, *Enlaces* included them from the start as part of its computer laboratories and its educational work programme. The purpose was to have the infrastructure necessary to connect people, their experiences and projects, provide access to information bases worldwide and reduce the isolation of many schools, integrating them into a national educational network.

Just as Internet began to reach Chile, a portal for educational material on the Internet was developed. It quickly turned into the main centre for educational resources on the Internet in Chile, with spaces dedicated to communications and participation from both teachers and students. A major contribution to the Portal's use was a donation from the main private telecommunications firm (*Telefónica CTC Chile*), which has meant that most *Enlaces* schools can connect to the Internet without paying the typical traffic and telephone service charges.

In 2001, the educational portal, called EducarChile, was created. It has become the main educational centre in the Internet for teachers, students, families and educational researchers, receiving more than a million visits per month.

## *Enlaces results*

Generally speaking, the results from the latest studies (2000-2002)<sup>4</sup> reflect the effort that Chile has made through *Enlaces*, which has provided the school system as a whole with an extensive technological infrastructure and new teaching skills, as well as seeking diverse educational uses for this technology. Similarly, international comparisons<sup>5</sup> note Chile's standing in practically every aspect studied, including hardware, software, Internet, educational uses and training; however, the same comparisons point to the low use of ICT in school management and the difficulties teachers face in integrating technology into the curriculum.

Evaluations reveal that *Enlaces* has permitted broad, although still insufficient, access among teachers and students to new technologies; that teachers view this use of ICT in the schools positively; that teachers and students use these resources daily for a wide range of educational and, to a lesser degree, administrative purposes; and that some interesting pedagogical innovation has arisen hand in hand with these resources. Similarly, evaluations warn that on average teachers and students are still a long way from acquiring the technological skills hoped for; that teachers still feel insecure when faced with these new media; that more computers, educational software and better Internet access are needed; and that teachers need more concrete and applied support to reinforce the integration of these resources into their teaching practices.

Computer labs are used on average 28 hours per week in primary schools and 40 hours per week in high schools. Of this time, 70% is by students, with the most frequent activities involving classroom subjects, extracurricular workshops and free use.

## *Prospects and critical knots*

Evaluations suggest there is still ample room to expand and improve the use of information technology resources in schools. Three types of problems currently conspire to prevent this from occurring: pedagogical, insufficient knowledge about each learning sector; institutional, administrative restrictions

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4 IEA, Second Information Technology Study (SITES) (1999); Arancibia, Violeta (2002); COLLECT, Investigaciones de Mercado (2002).

5 International SITES-IEA study "Ministerio de Educación (2002) Estudio Internacional SITES MI. El caso de Chile. Síntesis de Resultados y Comparación Internacional, Santiago.

that make it difficult for teachers and students to appropriate these technologies; and material limitations, issues of costs, in terms of quantity of computer equipment available.

While *Enlaces* is indeed applying a series of initiatives to deal with these problems and open up new opportunities for educational communities, *the most complex challenge today is to fully integrate ICT into the curriculum.*

### ***Curriculum reform***

Between 1996 and 2002, the country's school system underwent the most important curricular reform of the past 25 years. In a major effort to adjust the contents and objectives of study programmes to meet society's needs and changing knowledge, a new curricular framework was agreed upon for primary education in 1996 and for secondary education in 1998. Likewise, the Ministry of Education developed new programmes of study for the whole K-12 sequence which were gradually implemented – one grade of primary and one of secondary per year, between 1997 and 2002. The curricular reform brought changes in five areas.

#### *Decentralisation of administrative arrangements*

Within the framework of compulsory national objectives and contents, educational units can formulate their own programmes of study or implement those developed by the Ministry of Education (14% of schools have designed their own programmes). Additionally the Supreme Council of Education, a public body independent of the Ministry of Education whose function is to act as the final authority on school curriculum matters was created through a constitutional law passed in 1990 at the very end of the military regime. In effect, this Council must approve all proposed curricular modifications before they can be implemented. The composition of the Council ensures that changes to the curriculum cannot be enacted by government decision alone.

#### *Overall curricular structures*

The 8-4 structure that distinguishes primary from secondary education was maintained. In contrast a significant innovation was made to secondary education by postponing from ninth to eleventh grade (or from 14 to 16 years of age) the start of academic (general) or vocational education. The new secondary curricula are structured around the distinction between general and specialised education, thus vastly improving learning opportunities for all students between 14 and 17 years old.

In the first two years of secondary education (grades 9 and 10), all students share a common curriculum or general education, independently of whether they attend an academic (general) or vocational educational institution. Therefore all students in the country can be said to share a common educational experience until grade 10; the decision about whether to continue in the academic or vocational mode which prior to the reform students were forced to make at the end of grade 8 at approximately 14 years old, is now taken two years later by 16 years olds with two additional school years under their belts.

In both the academic and vocational strands, during the final two years of secondary education (grades 11 and 12) the curricula combine general education with specialised education. In the academic (or humanistic-scientific) mode approximately two thirds of the time is spent on general education. Conversely, in the professional-technical strand about two thirds of the time is devoted to specialised education.

Within the professional-technical mode of upper secondary education, differentiation or specialisation is comprised of 46 different specialties organised into 14 economic sectors or occupational groupings (in contrast to more than the 400 specialties available prior to the reform). These new specialties are offered after students have benefited from a general education that is in substance more robust than that which was available prior to the reform, and in terms of their specific contents and practices are designed to prepare students for a life of work in a particular occupational sector rather than for a particular job. This approach is based on the assumption that whereas in the past it was not unreasonable to expect jobs to be permanent, this is no longer the case since the technologies that underpin particular jobs change, producing uncertainty rather than permanence.

Specialised education within the academic strand requires that part of students' plan of study be devoted to a combination of courses (not less than two and not more than four), which students themselves choose on the basis of personal interest. These courses, in their specialised mode, treat certain contents and objectives in greater depth and breadth than they do within general education.

### *Curricular organisation*

The reform involved reorganising subjects and introducing multidisciplinary (cross-curricular) themes. These latter include themes related to values and skills; the inclusion of information technology throughout the curriculum; provision of formative experience in technology; and an earlier start for learning a foreign language (from grades 5 to 7).

### *The contents and focus of subjects*

The curricular reform included changes in *orientation and content* within subjects, according to three criteria: i) changing from an emphasis on contents to an emphasis on skills or competencies; ii) updating and enriching subjects, or requiring higher standards of achievement in them; and iii) ensuring meaning or relevance of the curriculum in terms of pursuing connections to students' lives. Given the needs of a more information and knowledge-intensive society, the skills that are emphasised by this new curriculum, include: ability for abstraction, systemic thought, experimentation and learning to learn, communication and co-operative work, problem resolution, managing uncertainty and adapting to change. Finally, the new curriculum promotes the development of civic habits and attitudes built upon the unquestionable value of democracy and human rights. (Ministry of Education, 1998)

### *Values*

As concerns values, the new curriculum assumes that particularly in countries such as Chile where conflicts of value have had historical consequences, it is important that students be provided with opportunities to explore the meaning of and relation between values and be challenged to think about conflicts of value in different contexts. The new curriculum aims for students to understand the complexity of and inevitable tensions between rights and responsibilities, competition and co-operation, globalisation and cultural identity, faith and scepticism. It presumes that an education that were to ignore or subordinate one of the values in each set would be deficient because it would have missed the very point of an education in values: helping students to acquire the skills needed to act as moral agents who by definition can think for themselves and thus act on the basis of good reasons. The approach to values in the new curriculum does not impose harmony on positions which indeed are different, nor promote the teaching of abstract generalisations for their own sake (without an analysis and understanding of the reasons that may uphold them). But it does not embrace moral neutrality either: it aims to help form a society whose members can give ever increasingly careful moral consideration to issues where conflicts of value are involved, both as citizens and economic actors who participate in a culture of democracy and social co-operation.

### *Full school day*

In 1996, the Government decided to extend school hours, moving away from two shifts of six pedagogical periods to a full school day, consisting of eight 45-minute pedagogical periods. This change involved an absolute improvement to students' times available for curricular subjects, as well as

extra-curricular activities, and the possibility of students and teachers taking advantage of facilities outside of regular classroom time, all with important implications for education and equity (by offering an educational space to students facing difficulties with working at home).

The longer school day was based on quality requirements: the higher cognitive skills required by the new curriculum to meet teaching objectives take more time; the time required for exploring and analysing is greater than that occupied by lectures and dictation; developmental tests and project pedagogy assumes longer test times than multiple choice tests or responses from “closed” sources”, such as summaries and fact sheets.

It was also based on criteria of equity: there is an intimate link between the time factor and learning in socially vulnerable contexts. For poor groups, with different socio-linguistic codes from those of the general school culture, this experience requires learning a whole new code, which takes them more time than students from middle and upper income groups, whose family socialisation already includes school codes.

The impact in terms of longer school hours for each level and type of education within the system is:

- 232 chronological hours per year from third to sixth grade.<sup>6</sup>
- 145 hours in seventh and eighth grades.
- 261 hours in the first two years of secondary education.
- 174 hours in the last two years of secondary education.

This change in the length of the school day has required a considerable investment in school infrastructure (about USD 883 million between 1997 and 2003), and more resources for hiring teachers through the subsidy. In effect, each school that applies the full school day (*Jornada Escolar Completa* JEC), has experienced an increase, which depending on the number of hours increasing per level, ranges from 24% (secondary professional-technical education) and 33% (primary education and general secondary education). In 1997, the country had 9 013 schools with public funding. Of these, 3 384 (mostly rural) established the full school day that same year, because they

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<sup>6</sup> 232 chronological hours amount to 309 45-minute periods and 9.3 additional weeks of classes per year.



already had the necessary infrastructure. The 5 629 remaining schools have gradually applied the new school day since 1997, more slowly than originally planned, which has led the government to extend the deadline for compliance with this initiative, from December 2002 to December 2006. As of May 2003, 6 966 Schools with an enrolment of 2 281 827 students, (65.6% of the subsidised enrolment) had applied the full school day (Ministry of Education, Planning Division, 2003).

### *Stages*

Three stages are clearly apparent within this process of accumulative change, during which the scope of actions and their focus varied, but they always remained within the same strategic guiding framework.

A first stage, from 1990-1995, essentially involved establishing the base conditions for the school system to function better.<sup>7</sup> Politically, the government placed a high priority on this sector, working hard to build the confidence and consensus necessary to apply an agenda for educational change; improved labour and professional conditions for teachers; material conditions for learning, with up-to-date resources in sufficient quantities (text books, libraries, educational material, networked computers); technical and institutional conditions to renew teaching methods and management, through efforts such as the P-900 and rural programmes, particularly for language and mathematics; and educational improvement projects (*Proyectos de Mejoramiento Educativo – PME*) to encourage project work by teaching teams.

The second stage began in 1996 with a governmental decision to establish the full school day and reform the curriculum, complemented by two areas of support measures: more sweeping improvement programmes (expanding *Enlaces*, creating the Montegrande programme) and expanding policies for reinforcing the teaching profession (upgrading initial training, programmes for study abroad, awards for teaching excellence). In 1996, the school system reform actually began: its hours of functioning changed and the learning experience that the system sought to offer children and young people was transformed. This reform effort has been successfully applied to both the full school day and the curricular reforms. The metaphor that best reflects the end of this stage is: “The new building is now completed.”

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7 Landmarks included the 900 Schools programme (1990), the Teachers’ Statute (1991), the MECE-Primary programme (1992), the national commission for modernising education (*Comisión Nacional para la Modernización de la Educación*, 1994) and the start of the MECE-secondary programme (1995).

The third stage began in the second half of 2000, when unsatisfactory learning results, coming from both national and international measurements (SIMCE – *Sistema de medición de la calidad de la educación* and TIMSS – Trends in International Mathematics and Science Study) became known. These revealed that the school system was achieving poorly compared to competitive learning standards worldwide. Both measures revealed that while the foundations for the new school system were now in place, learning experiences occurring within it were still a long way from what was required by a society increasingly integrated into a globalised world and ever more demanding in terms of organisations’ and peoples’ knowledge and abilities. “Bring the reforms to the heart of the classroom,” that is directly into teaching-learning practices, is the motto that best expresses policy at the start of the new decade. The policy response to this new challenge is based on two fundamental pillars. First, a campaign to improve reading, writing and mathematics skills from kindergarten to grade four, which included redesigning the 1996 curriculum for the first four grades, changing teacher training policies, and making special efforts to obtain parental support. Second, though schools will continue to enjoy the kinds of support they have been given over the past years, the Ministry is now committed to ensuring the quality of results through putting into place, (among other measures), teacher evaluation and specific performance requisites.

## **Results of the policies from the 1990s**

### *Access and coverage*

One fundamental result of the past decade’s changes to the school system is that it now receives and retains many more students than it did in 1990. This expanded access, in a context of marginal population growth, is associated with rising expectations regarding education among lower income families, in a socio-cultural context that considers education to be a decisive factor in social mobility, and a school system that has become much better at receiving children from the poorest two quintiles of the population, providing them with assistance and keeping them studying.<sup>8</sup> Thus, in 2001, school enrolment (primary and secondary, as Table 1 shows) was 17.1% higher than in 1990 (representing 469 000 additional students).

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8 In 2000, 40% of primary enrolment and 30% of secondary received lunch and/or breakfast. Among the lowest income quintiles this percentage rises to 63% and 40%, respectively. In 1990, food support was 20% less in the case of primary and non-existent in the case of secondary education (Bellei, 2002).

## *Drop-Out Rates*

In Chile, virtually all children start primary education at some point, but they do not necessarily remain in or complete the first four years of school. Figure 1 provides the drop-out rate for each level during the 1990s. This has hovered at around 2% in primary beginning 1997; in secondary this has dropped consistently since 1996, from 12% to 7%. The decline in secondary school drop-out rates began at the same time as programmes for improving and increasing investment at this level.

## *Improvements to the learning resource base*

Policies in the 1990s poured significant resources into transforming the material conditions affecting access to information and knowledge during the educational experience. The “bottom line” for learning was raised for the entire enrolled population. Students in primary and secondary schools now experience learning in the context of universal access to textbooks in five subjects (mother tongue, mathematics, history, science and English), book collections in the classroom at the primary level and for the school as a whole at the secondary level, with computer networks available (for 85% of students enrolled in 2000). A TIMSS report in 1999 found that with this set of factors, Chile has achieved a school system with characteristics that place it within the international average for the 38 participating countries, mostly from the first and second worlds (Mullis, Martin, *et al.* 2000).

## *Social assistance*

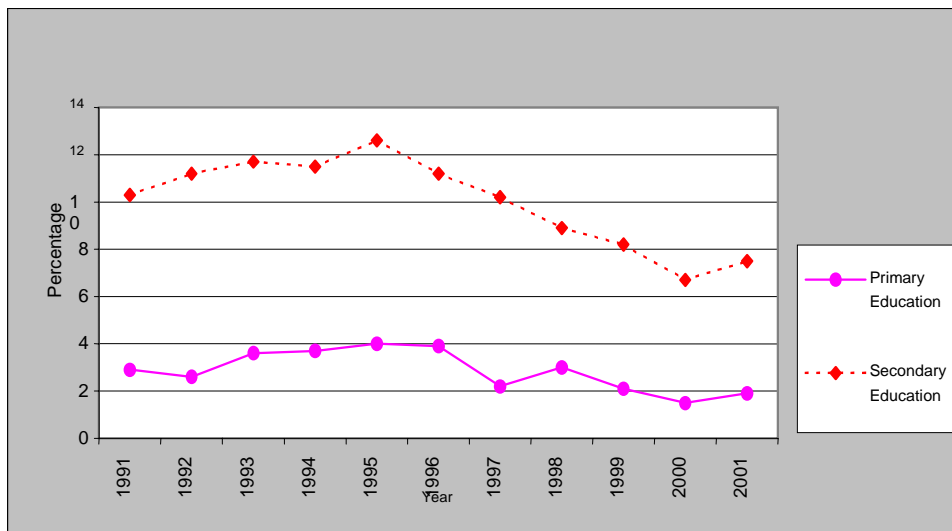
The policies of the 1990s included decisive support in the form of social assistance to those enrolled from lower income backgrounds, from the pre-school through to the high school level. This has improved retention and improved learning conditions. These consist mainly of food, health care, school supplies and grant programmes. The main support comes in the form of school meals and health care. In 2003, the government, through a special agency for providing school assistance and grants (*Junta Nacional de Auxilio Escolar y Becas – JUNAEB*), guaranteed breakfast and lunch to 93 636 girls and boys from kindergarten (50% of the total) and pre-kindergarten (100% of the total in attendance),<sup>9</sup> and 867 589 primary students (39.8% of total enrolment in

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<sup>9</sup> A percentage of pre-school enrolment is dealt with by two other public agencies: *Junta Nacional de Jardines*, (JUNJI) and the *Integra* Foundation. Of total enrolment of children between 0-5 years, assisted in 2001 (463 481 children), schools looked after 287 296, while the other two agencies took care of the rest.

publicly funded education). In this decade, the government started to offer school meals at the secondary level, where 219 119 students now have breakfast and/or lunch (30.6% of the total enrolled in publicly funded education at this level). For children in primary school and the first year of high school, the *JUNAEB* itself looks after 100% of the demand for eyeglasses and hearing-aids (100 415 children per year).

Figure 1. **School drop-out rates by levels, 1991-2001 (%)**



Source: Ministry of Education, Research and Statistics Department, "Estimaciones de deserción en Educación Media" (estimated high school drop-out rates), 2002.

Note: At the primary level, students only begin to drop out from seventh grade on, particularly in rural contexts.

### ***Changes in teaching practices***

When three aspects of teachers' work are examined – extra-curricular activities, management of student groups, teaching – the overview that emerges from the set of existing evaluations of trends in the 1990s is as follows.

- *Teachers' relationships with peers and extra-curricular activities:* The prevailing practices among teachers, along with the ideas and values behind them, have changed in line with the perspective of programmes developed centrally during the 1990s. These guidelines essentially apply two criteria: first, the encouragement of more professional, pro-active relations (the opposite of that of a permanent

bureaucracy or functionary) with the institution and their own activities, encouraged by the design and implementation of publicly financed projects; and second, teamwork as crucial to professional work in education. From this perspective, the repeated experience of practically all educational units throughout the country in developing and implementing educational improvement projects, the administrative commitments to learning results assumed by some school-operators toward the end of the decade, and the fact that a small but significant number of schools (14%) have started to develop their own study programmes all speak of significant change. This, with all its ups and downs, reflects important progress in developing new skills.

- *Social relationships and work with students*, which define the specific atmosphere in which teaching and learning take place. The current evidence on this aspect<sup>10</sup> coincides in indicating that teaching practices have changed, favouring a closer relationship with students, which is conducive to including more life elements and contexts within formal teaching experiences. Undoubtedly, students participate more actively now than they did in the past and group work has become a typical feature of Chile's classrooms.
- *Teaching*: In this area, the heart of the teachers' role, teaching contents, skills, values, and achieving learning, the evidence suggests qualities typical of a "transitional" or "mixed" nature. Thus the evaluation of MECE-Secondary concluded that *both innovative and traditional practices* were present and that the most common fell between the two and could be considered *transitional*. These typically combine a better relationship with students and their lives, improving the teaching relationship and making teachers more active, but with a diverse educational purpose. The evidence available on teaching practices at the elementary level suggests similar conclusions. The World Bank's *Audit Report* on MECE-Primary (World Bank, 2000) concludes that typical classrooms at this level (at both municipal and private, subsidised schools) reveal that a new pattern has emerged, whose features include *more student activity than in the past, more*

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10 From evaluations of the following programmes: P-900 (Sotomayor, Medina 2001 ) and Rural (Universidad Austral, 1998 ), MECE-Secondary, (Cide, 1999), from the *Encuesta de Implementación Curricular*, Mineduc - Unidad de Curriculum y Evaluación, UCE, 2001), and from MECE-Primary (World Bank, Audit Report 2000)

*closeness in their relationships with teachers, and more variety and richness in the use of learning resources, but the whole lacks a focus on achieving learning objectives.* This reveals a certain activism within new social relationships and heightened sensitivity to the students' vital context, but one that remains only weakly associated with learning targets.

### ***Learning results***

The evidence provided by comparing SIMCE results throughout the 1990s can be summarised in four main observations. First, there is a consistent although slight tendency for national achievement averages to improve in the first half of the decade, thus slightly closing the achievement gap between municipal and private-paid schools. This stagnated from 1996 to 2002<sup>11</sup> and the gap widened. Second, the social distribution of learning reveals a highly stratified, inequitable structure, similar to that of 1990. Third, the improved performances are higher than average in the case of primary schools receiving special attention from specific programmes, such as the P-900 and the rural programmes, which have reduced the performance gaps between these students – the poorest – and the rest of the country. Finally, the differences in learning performance among schools with different administrative systems (municipal and private-subsidised) are minimal and do not always favour private education, when socio-economically homogeneous groups are compared.

The following figures summarise the trends apparent in successive national tests of learning in mathematics and language for fourth and eighth grade, primary students. These tests are practically universal (less than 5% of eligible students are not tested) and were applied by the system for measuring educational quality SIMCE from 1992 to 2002.

#### *Grade 4: primary education*

Inter-annual comparisons using the 1992-1996 series, while not submitted to equating procedures, are based on tests prepared and applied using identical processes. The 1996-2002 comparison involves tests submitted to IRT (item response theory) measures and rigorous equating procedures.<sup>12</sup>

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11 However, this was not the case for eighth grade students of history and science, who did improve from 1997-2000, (see Figure 4)

12 Scores on the different fourth grade tests are not directly comparable throughout the decade. Between 1992 and 1996, although the same scale was used (percentage of correct replies) no equating procedure was applied

For the set of comparable SIMCE measures, fourth grade students' results tended to improve slightly in both mathematics and language between 1992 and 1996 (note the reduction in differences between categories of schools), and then stagnate. None of the school categories regressed during this period. The best results were for paid education (85%-86% average, correct responses between 1992-1996 in mathematics; and then 292 and 298 points on the IRT scale in 1996, 1999 and 2002), while the gap between these and municipal schools fell between 1992 and 1996 (as the latter's average scores rose from 64% to 68%) and rose between that year and 2002 (from a 55- to a 61-point gap) as paid education scores rose, while municipal scores held steady, and then in 2002, dropped slightly. Private, subsidised education shows the same pattern as municipal education, with higher scores, see Figures 2 and 3.

In language, the general trend for the period analysed is less clear and stable: all categories of schools alternate episodes of increases with slight declines in results. As with mathematics, there is also a decline in the gap between publicly financed and private schools during the 1992-1996 period, a trend that was interrupted during the 1996-2002 period. Changes from 1996-2002, although they varied (paid private schools advanced, municipal school results fell, and publicly subsidised private schools stagnated) these were not statistically significant (except in the case of paid schools).

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(common questions used for different measures to control for inter-annual differences among instruments) and strictly speaking it is not clear that test difficulty remained constant throughout. Thus, the following figures do not combine the values for different years for the same school administrative category. For this period, the most reliable comparisons are those that compare the three types of schools (vertical lines) for a single measure (year). The SIMCE changed its measurement model in 1999, including IRT (Item Response Theory) score calculations and changing its scale (from 0-100 or percentages to an average 250 and 50 point standard deviation). An *ad hoc* study equating between measures for 1996 and 1999 makes it possible to compare these.

## *Grade 8: end of primary education*<sup>13</sup>

Figure 4 provides national averages for learning achievement for the final primary level cohort, eighth grade, for the 1993-2000 period. Inter-annual comparisons in this case were based on equating procedures for all years: comparisons are based on the same sub-sets of questions answered in different years.

For the complete period only language and mathematics can be compared and both subjects posted minor but consistent increases between 1993 and 1997.<sup>14</sup> In the comparison for 1997-2000, there is a three-point decline (on the scale averaging 250) in language, while mathematics remains stable. At the same time, significant rises occur in science (10 points) and history (6 points).

Regarding grade 8 results for the decade it is important to remember that while in 1993 there were 216 000 students in this grade, in 2000 there were 21% more, or 261 000. Two thirds of this increase was due to a population growth of the age group, and 6.4% to an increase in coverage, which particularly benefits children of rural origins in the poorest quintile. This makes the increases especially noteworthy.

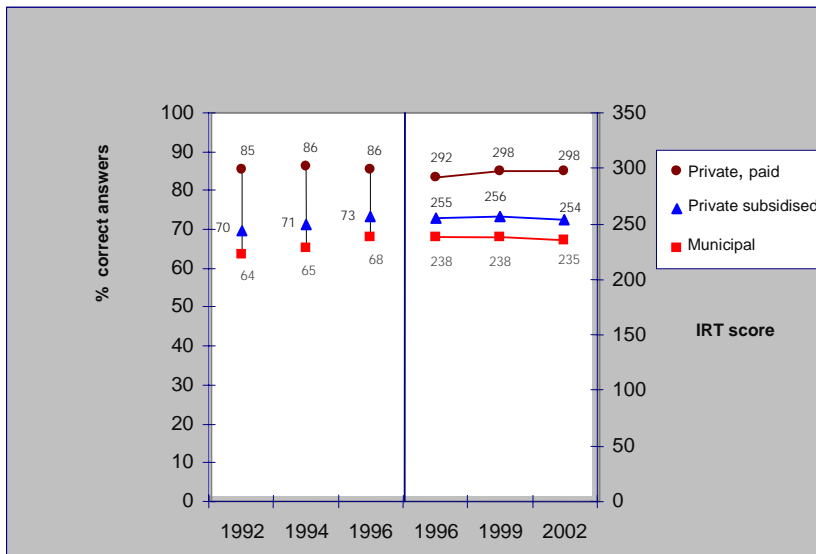
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13 Unlike the situation with grade 4 results, for grade 8, inter-annual comparisons can be made (expressed in the figures by the horizontal lines that denote the inter-annual trends for a single category of schools) given that the tests for some subjects contained common questions. Unfortunately, the common core of questions is not always the same and as a result comparisons are only possible between pairs of years and do not permit the reconstruction of a series for the decade (this is due to the presence of two different values for the same subject during the same year. As with grade 4, the last grade 8 measure involved a change in the measurement system (from the percentage of correct answers to IRT values).

14 There are two scores for mathematics in 1995 because the question subset to compare with 1993-1995 was not the same for the 1995-1997 comparison.

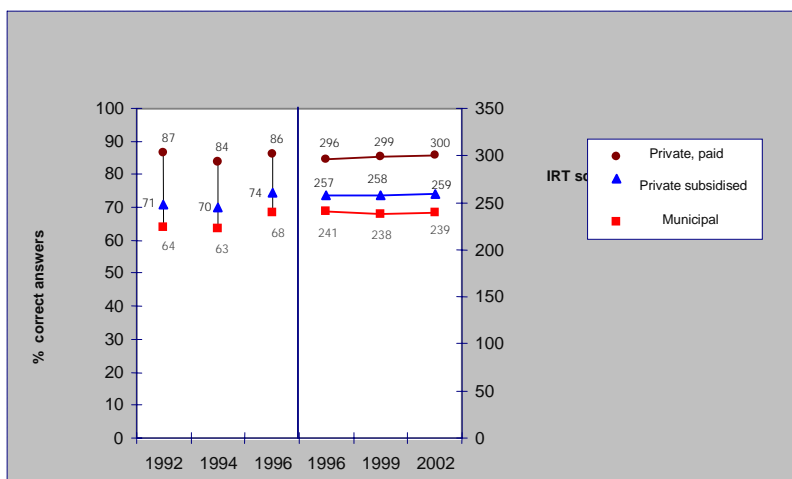


Figure 2. Fourth grade mathematics: trends in SIMCE scores, 1992-2002



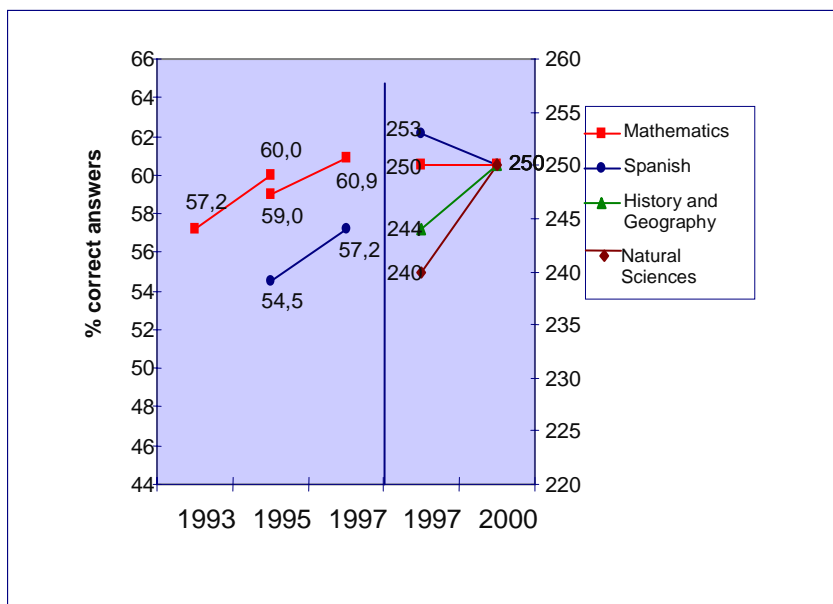
Source: C. Bellei (2002), based on the Ministry of Education, SIMCE, Research and Statistics Department. 1992-1996 series are expressed as percentages; 1996-2002 series are expressed as an IRT score.

Figure 3. Fourth grade language: trends in SIMCE scores, 1992-2002



Source: C. Bellei, (2002) based on Ministry of Education SIMCE and Research and Statistics Department. 1992-1996 series expressed in percentages; 1996-2002 series expressed as an IRT score.

Figure 4. Changes in SIMCE results, eighth grade, 1993-2000



Source: C.Bellei (2002) based on i) María Inés Álvarez “Antecedentes de la evaluación Simce en la década 1988-1998” Ministry of Education- SIMCE 2001; ii) SIMCE 2000, Ministry of Education.

### *Learning results of compensatory programmes*

The learning results of primary schools included in the two compensatory programmes of primary education, P-900 (*Programa de las 900 Escuelas*) and Rural Education, (*Programa Escuelas Rurales Multigrado*, see Table 6) improved consistently and more than in the rest of the school system during the decade, thus reducing the gap between their learning outcomes (corresponding to the poorest 15% of enrolments) and the average of the country. As shown in Table 7, the learning results of the primary schools included in the P-900 programme, in language, mathematics and a subject which combines natural and social sciences at grade 4, between 1992 and 2002 increased more than in the rest of schools.

Table 7. P-900 schools and rest of the system: SIMCE results compared. 1996-2002

	P-900 Schools				Rest of primary Schools					
	1996	1999	2002	1996 - 1999 Difference	1999 - 2002 Difference	1996	1999	2002	1996 - 1999 Difference	1999 - 2002 Difference
Language	216	223	230	7	7	256	253	258	-3	5
Mathematics	215	227	227	12	0	252	252	254	0	2
Understanding one's environment		223	229		6		253	258		5

Source: Ministry of Education, SIMCE. 2003.

Small rural schools, which during the 1980s exhibited the poorest outcomes of the system, have been the object since 1992 of a special compensatory programme (*Programa Escuelas Rurales Multigrado*). The learning gap in language and mathematics between their averages and those of the rest of the country was reduced consistently between 1992 and 1996 – from 15 to 11 percentage points. From 1996 to 2002, the gap was reduced again in language – from a gap of 34 points to 19 on the SIMCE scale, while remaining stable in mathematics. (Cox, 2003).

The results for primary education have been the subject of many studies that focused on comparing results by type of school, with contradictory explanations for the better results obtained by subsidised private schools (Aedo and Larrañaga, 1994; Lehmann, 1994; Winkler and Rounds Parry, 1996; Carnoy and McEwan, 1997; Mizala and Romaguera, 1998; Bravo, Contreras and Sanhueza, 1999; McEwan, 2001; Hsieh and Urquiola, 2001; Gallego, 2002; Sapelli and Vial, 2002).

Average scores, when not controlled for students' socio-economic characteristics, are systematically higher for private subsidised schools, which also operate at a lower per student cost than municipal schools.

This data seems to indicate that private subsidised schools are not only more effective than municipal ones, but also more efficient, and that these qualities are associated with a different management system and greater productivity. A closer look, however, confirmed by results from the studies by Carnoy and McEwan, Mizala and Romaguera, Rounds Parry, Hsieh and Urquiola, reveals that the characteristics associated with students' origin are more responsible for the differences observed than the different management systems.

Table 8 provides a direct view of this, as it provides SIMCE results for grade 8 in 2000, which that year for the first time were ranked not only by administrative dependency but also by homogeneous socio-economic groups, defined according to educational factors (parents' education), family income and the social vulnerability index (food, overcrowding).

**Table 8. Grade 8: average score by school type and socio-economic group, 2000**

Socio-economic group	Mathematics			Language		
	Municipal	Private subsidised	Private paid	Municipal	Private subsidised	Private paid
A. Low <sup>1</sup>	231	221	-	230	221	-
B. Low Middle	232	233	-	232	234	-
C. Middle	245	251	-	246	253	-
D. High Middle	280	275	279	276	274	282
E. High	-	303	302	-	297	297
<b>Total</b>	<b>239</b>	<b>256</b>	<b>299</b>	<b>239</b>	<b>257</b>	<b>295</b>

1. Socio-economically homogeneous groups based on four variables: mothers' and fathers' educational level; family income and school vulnerability index. Mother's average years of education for Group A is six years; B, eight years; C, ten years; D, thirteen years; E, sixteen years. In percentages, the groups represent: A= 9%; B=32%; C=35%; D=17%; E=7% (of a total 251 618 students). Ministry of Education, *SIMCE Resultados 2000* (SIMCE results 2000). 2001.

Source: SIMCE, Report on Eighth Grade Results, 2000, Santiago, 2001

Evidence suggesting that the results of privately administered schools are better than those for municipal schools is reversed in the case of groups living in extreme poverty (Group A), for which municipal education obtains the best results; in the next group (B), there is practically no difference between the two types; for Group C, subsidised private schools do show an advantage over municipal ones; and for Group D, high middle income, which includes a select group of excellent municipal schools, these schools actually do better than those under private management. Paid private education covers only the groups with the highest levels of education and income, and their results are also higher.

### *Secondary education*

The main characteristics of learning results at the primary level are echoed at the secondary level, where there were SIMCE tests for the second year of high school in 1994, 1998 and 2001. National results show a slight improvement in mathematics and stable results for language, with more students covered, particularly from the poorest quintiles. The difference in types of schools and the structure of social distribution of results is similar to that for the primary level (Bellei, 2002).

### *Summary of results*

Evidence on coverage and flows, improvements to the quality of learning contexts, changes in teachers' practices and census-type evaluations of learning throughout the 1990s indicate that the process of change underway has significantly improved *access* to education, *learning relationships and contexts*, at the same time as its impact on *learning achievement*, while positive, remains tenuous. National achievement averages remain below the objectives defined by the curriculum and far from the international standards to which they aspire. As concerns equity issues, a significant reduction in the difference in schooling years between the richer and poorer quintiles (see below) and a closing of the learning gap between those schools receiving special assistance (15% of total enrolment) and the rest of the system, together constitute indisputable improvements. Notwithstanding these important achievements, the structure of the social distribution of results remains very unequal.

## *Chapter 2*

### **FIVE STRATEGIC ISSUES: TEACHERS, EQUITY, ADMINISTRATION AND MANAGEMENT, TECHNICAL EDUCATION AND EVALUATION**

This chapter covers five strategic issues: teachers, equity, administration and management, technical education and evaluation. It provides characteristics and policies concerning teachers' job protection, training and professional development. Regarding equity issues it deals with educational opportunities and equity, and education's inequity as a policy problem. In the area of administration and management, there is a presentation of municipal administration and the problems in municipal education and how the school is considered as the basic unit in administration. There is a description of Technical Education at the secondary and tertiary levels. The final section presents the key role of evaluation. The SIMCE tests are discussed briefly as well as the current uses of SIMCE. Other international tests are mentioned such as TIMSS, PISA, SITES and 2000 Civics. The chapter closes with current challenges and questions.

#### **Teachers**

Achieving the better learning levels required by the country for its development (a new curriculum for the majority), involves pushing the limit dramatically represented by each year's SIMCE results: the skills and practices of most teachers. What this limit consists of and how to move it is the main issue facing educational policy for the school system in coming years.

The policies of the 1990s decisively affected teachers' working conditions, which unlike in the 1980s are protected by the Teachers' Statute; wages, which have more than doubled; and opportunities for training, for which supply has multiplied and diversified.

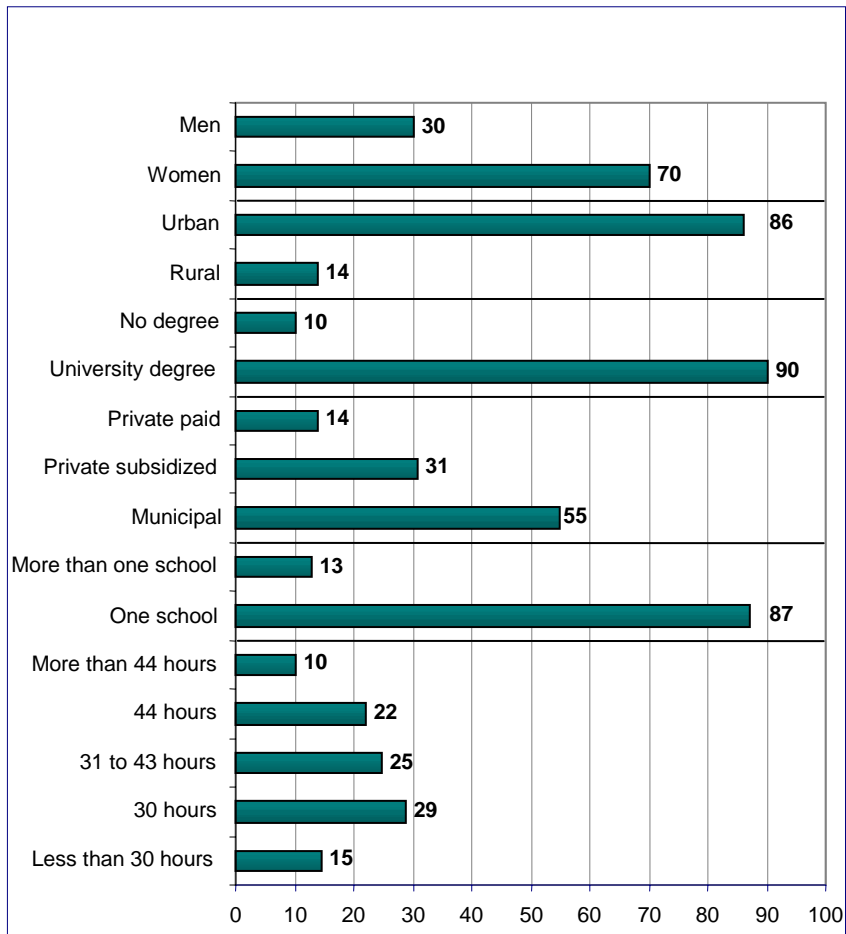
In terms of overall progress, the data from national and international evaluations indicate that the issue of initial teacher training is today the main problem pending in this arena.

## *Teachers' characteristics in 2002*

Figure 5 summarises some of the main characteristics of Chilean teachers, according to the following variables: gender (men/women), location (urban/rural), educational training (no degree/university degree), type of school, in terms of its administration, where the teacher works (private paid/private subsidised/municipal), number of schools where the teacher is employed (more than one/one), hours per week under contract (>44 hours/44 hours/31 to 43 hours/30 hours/<30 hours).

- Most teachers are women, with two exceptions: in secondary education, gender levels are more similar; more men than women are principals.
- Ninety percent of teachers have a university degree in education. Nonetheless, there are some curricular areas where specialised teachers are scarce, mainly English and Science.
- In municipal education, the pupil:teacher ratio (PTR) is 23 students per teacher; in private subsidised, 31; in private paid, 15.
- Only 13% of teachers work in more than one school.
- Three of every four teachers work from 30 to 44 hours per week.
- The distribution of teachers by age is very similar to that of OECD countries, but clearly they are older than in Argentina or Brazil; teachers over 50 years of age account for 10% of teachers in Argentina and 5% in Brazil, versus 30% in Chile (OECD/UNESCO WEI, 2002).

Figure 5. **Basic Characteristics of Chilean Teachers, 2001**  
(percent)



Source: Ministry of Education, *Estadísticas de la Educación. Año 2001, 2002*.

### ***Policies in the 1990s: on the job protection and wage increases***

#### *On the job protection: teachers' statute (1991, 1995, 2001 laws)*

The first major structural reform to the school system between 1990 and 1996 was the redefinition of teachers' working conditions. In 1991, the government passed the Teachers' Statute, which establishes national regulations for working conditions (hours of work, maximum schedules, holidays), a common and improved wage structure, bonuses for upgrading, professional



experience and performance in difficult conditions, and high levels of job security. Although the Teachers' Statute establishes some important distinctions, it covers all teachers in Chile whether they work in municipal or private schools and whether they teach or hold technical or management positions.

The new Statute was in response to teachers' expectations that they would again receive state protection, withdrawing them from the conditions prevailing on the private labour market.

The need to make the Statute's rules more flexible in terms of teaching staff mobility, combined with the government's interest in introducing innovations that would link performance to wages, led to two laws (1995 and 2000) to reform the Statute, which introduced some changes into its general provisions. In 2000, the new government and the national teachers' union (*Colegio de Profesores*) reached an agreement establishing new criteria for teachers' careers, associating their progress with individual performance evaluations and voluntary classroom skills accreditation to receive bonuses for teaching excellence.

At present, Ministry of Education-Teachers' Union efforts are focusing on developing instruments, procedures and responsibilities that will serve as the basis for teacher assessment, applying a new, more professional, less bureaucratic approach to teachers' careers.

### *Wages*

Throughout the past decade, teachers' wages rose by a real 145% to 170%. After this first substantial rise, traditional and innovative approaches have been taken to improve teachers' wages. The first are associated with the State setting a minimum national wage for teachers, according to the traditional criteria of seniority and promotions. Innovations are associated with the principle of linking teachers' wages to performance, whether measured indirectly according to characteristics specific to the teacher (bonuses for additional training); directly, by accrediting excellence (excellence awards and bonuses, see below); or collectively, through school learning results (*Sistema Nacional de Evaluación del Desempeño – SNED*).

Figure 6 shows the impact of these measures on improving teachers' wages. As is apparent, the increase has not only been substantial, but has continued over time. Municipal teachers' average wages have risen 145% throughout the decade. The high priority assigned to ensuring a minimum wage level is clear, as municipal teachers' minimum wage rose in real terms by

174%, while for those working in private subsidised schools, it rose by slightly over 400%<sup>15</sup>. Finally, the idea of bringing wages in the two types of schools into line is apparent from 1996 on, when wages were levelled. Teachers' wages increased more than those of workers generally and public sector employees during the same period.

### *Bonuses: seniority on the job and performance*

Figure 7 presents the set of monetary incentives available to teachers in Chile in 2003. The amounts (in CLP per month) express the maximum available for each item, that is the top amount that teachers can aspire to, depending on how they decide to increase their income.

The main incentive continues to be “seniority” by a large margin: a teacher with 30 years' service receives an additional CLP 275 000 per month for this reason. Upgrading courses and certificates may add CLP 110 000 per month and constitute the second most important incentive directly related to teachers' professional activity. The following incentives, in order of importance, refer to teachers' placement within the system: if they opt to work in locations considered difficult for geographic or social reasons, they can receive CLP 80 000 per month more; a more decisive step, however, is to move into management or technical functions and leave the classroom, a change that involves an additional CLP 55 000 per month.

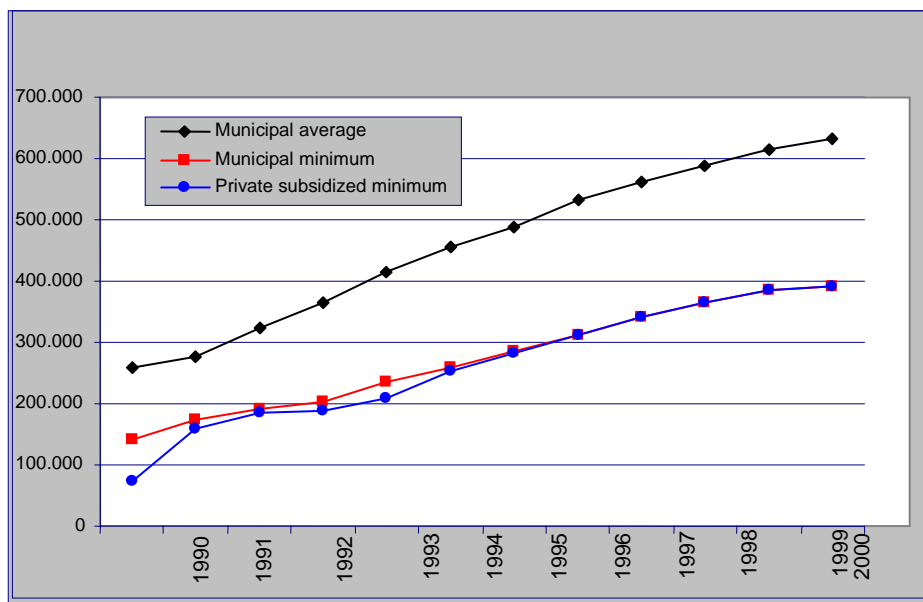
The country also rewards the good performance of a school, collectively, through the SNED (collective excellence). The average amount that teachers receive for this reason is CLP 23 000 per month, making this the smallest of the incentives available, although as we know this is shared with other teachers, thus encouraging teamwork but making individual effort to achieve the award less decisive. In contrast, two new incentives aim specifically to reward individual teaching excellence. These require spending a year gathering information and preparing for a demanding examination, to earn an additional payment of CLP 46 000 per month, double the collective performance incentive; and if these teachers are willing to work on training or advising their peers, they can receive a further CLP 50 000 per month. In short, despite the changes, traditional incentives remain strongest. However, taken together the three performance-related incentives can reach an amount similar to the maximum for upgrading and much higher than taking on school or regional management positions.

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15 In the case of private subsidised schools, the basis for comparison is not the average but the lowest observed wage in this sub-system in 1990.

Figure 6. Teachers' average monthly and annual wages

(44 hours per week, 2001 CLP)

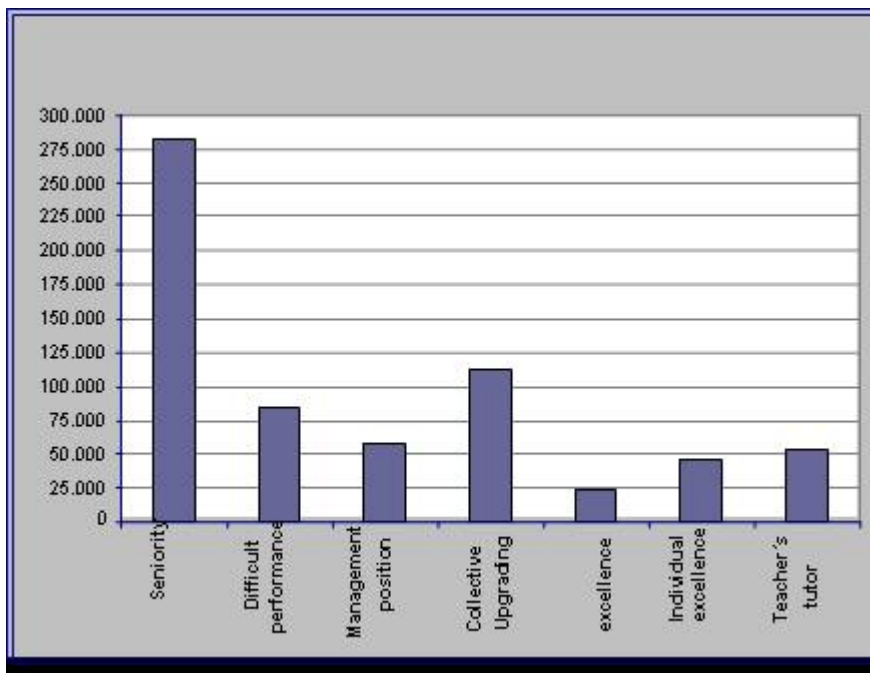


Source: *Estadísticas de la Educación. Año 2001*, Ministry of Education 2002.  
USD 1(2001) = approximately CLP 635.

Thanks to its design, every two years, the SNED reaches a significant percentage of the country's teachers, about 27% (see Table 9): at the same time, a significant percentage of the schools receiving this benefit changes each time the programme is applied. This, combined with the system's transparency and objectivity, is one of the main reasons for its widespread acceptance among teachers, contrary to what might be expected in terms of traditional teachers' attitudes. Similarly, the amount involved provides a worthwhile incentive, but does not significantly change personal wages: on average it amounts to an extra half a monthly wage per year.

Figure 7. **Allowances and monetary incentives for teachers**

(individual amount in 2002/3 CLP per month: maximum)



Source: Ministry of Education 2003.

1 USD (2002/3) = approximately 700 CLP.

### *Wage structure throughout career*

The initial and intermediate wage received by Chilean teachers is significantly higher than that of their peers in other countries with similar development levels (*e.g.* Argentina, Czech Republic, Mexico). Even if teachers' income is compared to per capita GDP, Chilean teachers are comparatively better off than virtually all developed countries: for example, Chilean teachers' starting wage amounts to 1.68 national per capita incomes, while the average for OECD countries is 0.97 per capita incomes, in Argentina 0.86 and in Mexico 1.19.

Table 9. **SNED beneficiaries and resources**

	1996-97	1998-99	2000-01	2002-03
Award-winning schools	2 274	1 832	1 699	1 863
Award-winning teachers	30 600	31 400	32 600	34 400
% over total teachers in Chile		27.3%	27.7%	25%
Annual average amount per teacher (2003 CLP)	232 000	244 000	284 000	288 000

Source: Ministry of Education - SNED 2002-2003.

### *The policies of the 1990s: teacher training and professional development*

The Educational Reform has improved teaching skills using three strategies: training teaching teams at schools using different methods involving learning workshops and collective reflection (since 1990, in five programmes); massive training offered through brief courses at specialised institutions to master the new curriculum (from 1997 to 2002); indirect support and investment for renewing teacher training centres (1997-2002).<sup>16</sup>

#### *Peer learning: school-based professional development*

In virtually all the different programme components making up the educational reform (see Chapter 1, Table 6) professional development activities have been organised. These take place within the school or in groups of schools, and involve teachers forming *peer communities*, which, with support from the Ministry in the form of documentation and its supervision system, reflect on, design, implement and evaluate actions involving change. This set of improvement programmes (*Programas de Mejoramiento*) and collective professional work not only were the first but have been the most sustained lines of action within the educational reform and are considered its very “heart”, in the sense that they establish the basis at the level of each educational unit for improving teaching.

<sup>16</sup> There is, moreover, a significant market in improvement courses that are not associated with the Ministry of Education, although they are centrally regulated (courses must be accredited by a ministerial institution) and form the basis for an additional wage assigned for “improvements”. Teachers, employers or the Ministry of Education finance these courses. Based on the number of hours spent in improvement courses, teachers receive a wage increase, as mentioned earlier. This, combined with a tradition of teachers seeking improvement, means that the market is very broad in terms of resources and coverage.

### *Teachers' upgrading at specialised centres*

Since 1997, the more complex primary and secondary education programme contents and disciplinary approaches have been taught using the new didactic approaches proposed. The magnitude of this task has required massive training and upgrading programmes for all teachers in every grade adopting the new curriculum. The process is carried out at two points during the school year (at both points, upgrading is free and voluntary for teachers and management): a 70-hour course during summer holidays; upgrading activities during winter holidays, either in person or through distance learning, particularly for those learning areas in which the curricular reforms involve the most complex changes.

**Table 10. Teachers participating in curricular reform upgrading courses**

	1999	2000	2001	2002
Primary	22 143	27 050	26 615	23 530
Secondary	11 174	13 107	15 672	9 770
Management	5 504	6 634	5 674	
<b>TOTAL</b>	<b>38 821</b>	<b>46 791</b>	<b>47 961</b>	<b>33 300</b>

Source: Ministry of Education, CPEIP, 2003.

### *Fellowships Abroad*

The professional development effort led by ministry policies has included since 1996 a scholarship programme for teachers to study abroad (*Programa de Becas en el Exterior para Profesores*). Each year the Ministry of Education selects a group of teachers to study in universities and educational centres abroad (to find out about excellent school practices), to strengthen their professional training and encourage innovation. Teachers involved have attended centres in Argentina, Belgium, Bolivia, Brazil, Canada, Colombia, Cuba, England, France, Germany, Israel, Mexico, The Netherlands, New Zealand, Peru, Puerto Rico, Spain, and the United States. In 2003, 400 teachers received scholarships to study abroad.

**Table 11. Grants for teachers to study abroad**

Year	1996	1997	1998	1999	2000	2001	2002	Total
Teachers	588	796	902	936	916	462	460	5 060

Source: Ministry of Education – CPEIP, 2003.

### *Improvements to teachers' initial training*

Since 1997, 17 university institutions involved in teacher training (which account for 78% of students studying teaching in Chile) have been implementing integrated reform projects they themselves have defined and which they won through competitions involving an additional 15 institutions. The projects were developed within the parameters and guidelines set by the Ministry of Education. For example, re-organised curricula had to set a high priority on students' practices; in terms of institutional improvements, projects had to show a commitment to and strategies for linking faculties or research centres involving the different disciplines, on one hand, and the school system, on the other.

Each university received on average USD 1.7 million between 1997 and 2002. Project implementation has varied according to the specifics of each institution. The programme also includes a fund for providing grants to cover tuition and study materials for high school graduates with good academic records who are studying to become teachers.

Three results stand out from this third and crucial strategy for strengthening teachers' skills. At the curricular level, student teachers' practicum were viewed as more important and moved up from the end of the process to the beginning. They also ceased to be treated as a poorly supervised formality and became a major factor defining training. Second, universities and the ministry of education jointly developed graduation standards for teachers, which make it possible to evaluate student teachers' performance at the point when they complete their studies, and the institutions where they are trained. Third, scores for entering teaching programmes also rose, through a strategy of providing grants and support to excellent applicants.

### *New students in teacher education*

The priority placed on working conditions and wages for young teachers, combined with grants to encourage good students to study teaching, is yielding important results. Until recently, places in university teaching programmes often went unfilled. In contrast, today most education schools are selective in their admissions procedures, thanks to the enormous rise applications: in 2002, for the first time, teaching was the university programme with the most applications in Chile, displacing engineering. Thus young people and universities responded to the needs of a more attractive, growing school system: the number of students studying to become teachers rose from 19 995 in 1997 to 27 817 in 2001, with primary school education being the programme that rose the most, as enrolment virtually doubled during this period. Moreover, this did

not occur in a context of reduced requirements. Quite the contrary, the quality of students admitted has risen significantly, as is apparent from the higher average scores on the university admission examination (*Prueba de Aptitud Académica – PAA*) as Table 12 shows.

Table 12. **Average score for admission to a teaching programme**

Admission Year	Average PAA Score	Change
1998	536.5	
2000	590.93	10.1%
2001	604.80	2.3%
2002	616.65	2.0%
2003	624.29	1.2%

Source: DEMRE, University of Chile, 2003.

### *Skills*

The fundamental policy issue regarding teachers is their skill in working effectively with a more demanding curriculum to obtain substantially better learning results from students from poor backgrounds. From either perspective, the question of skills is vital. In this sense, international evidence from TIMSS and national evidence from the SIMCE raises some concerns.

The following indices from the TIMSS study (Figure 8) are based on the teachers' own responses to how prepared they feel to teach the different subjects included in mathematics or sciences (grade 8, 1998).

In mathematics, 45% of the students are taught by teachers who declare little confidence in her or his preparation to teach the discipline. This percentage of unconfident teachers is almost three times higher than the international average (14%). In science, the figure indicates that 66% of students are taught by teachers who declare to feel little confidence to teach the discipline, against an international average of 39%.

### *Critical knots*

#### *Alignment between wage policies and professional development*

The need to align policy regarding teachers' wages and their professional development has become increasingly evident, to ensure this is consistent with the needs of the educational reform. This assumes, among other things, that schools have the tools for managing human resources that allow them to more actively encourage or sustain teaching improvement processes. This requires instruments for evaluating individual professional performance to orient service



improvement policies, channel professional incentives and make better hiring decisions and task assignments. Moreover, evaluating the relative value of one teacher versus another has become much more complex than simply distinguishing between classroom teachers, technical staff or principals, as the Teachers' Statute establishes. For example, the Reform has introduced an important number of "functions" involving co-ordination or designing innovation, carried out by "classroom" teachers, which are hard to reward under current legislation; in another area, the lack of specialised teachers (English, science, information technology) is not recognised in terms of wages. In short, relative flexibility, as the engine driving professional development and educational improvement, seems very necessary.

### *Mixed reactions and the incentive of a good career*

Teachers express mixed reactions to the reform: while they enthusiastically support teaching and curricular changes, they keep their distance from the reform as a political reality. This mixed reaction reflects the still weak integration of the reform's financial, working and educational aspects.

In the 1990s, progress was made in defining a wage structure focusing on two sets of elements: some basic and common to all (minimum starting wage, hourly wage for primary and secondary teachers, seniority and upgrading allowances) and others associated with working conditions or specific tasks (management tasks, location and allowances for difficult conditions). Moreover, since the middle of the past decade (1996), a collective teachers' performance incentive was created (SNED), followed more recently (2000) by an individually oriented one (Allowance for Teaching Excellence).

Three important features of this structure as it developed include:

- room remains to increase and improve incentives associated with teachers' performance both individually and collectively, increasing its weight in deciding wages and strengthening its association with teachers' professional development and the needs of the reforms.
- in the same direction, there is also room to improve some common allowances associated with working conditions, changing them so they operate more as *incentives and not mere gratification* (for example, the upgrading allowance).
- in association with the principals' performance evaluation system, more incentives could be offered these professionals for their good performance (currently the amount is the same for all).

## Equity

### *Educational opportunities and equity*

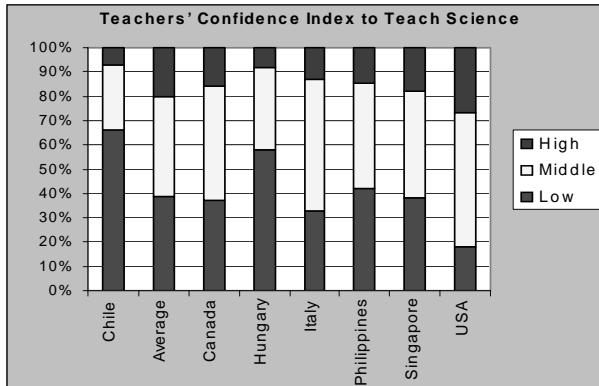
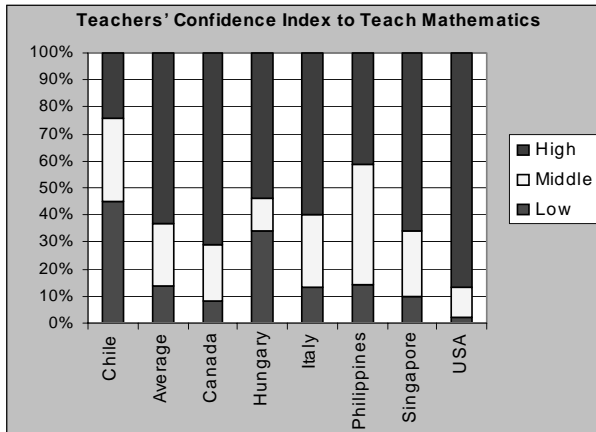
The results of policies implemented in the 1990s to improve equity should be assessed according to three criteria: opportunities to enter and remain at school and in higher education; socio-educational processes; and learning results. As concerns the first criterion, the balance is very positive as there has been a significant reduction in the difference between the average number of years of schooling of higher and lower socio-economic groups. In contrast, the balance is negative in terms of the second criterion: social segmentation has deepened such that increasingly, students from the same or similar socio-economic backgrounds are schooled together. In terms of the third criterion, a positive assessment can be made since the average learning results obtained by the poorer 15% of enrolments improved more than the rest of the system, and the distance between their results in language and mathematics drew closer to the national averages.

### *Social distribution of access to education*

The first level of educational inequity occurs with exclusion from the school. Today, at both the primary and the secondary level, the Chilean school system has achieved the highest coverage in its history. This rise in coverage (which in most cases reflects lower dropout rates) particularly benefits the poorest sectors of the population, thus improving social equity in the distribution of educational opportunities. In a complementary sense, the improvement of “process” indicators during the same period – retention and passing rates – has meant that the percentage of children and young people completing their school cycles has risen steadily and, provided this trend continues, should improve even further in the current decade. Figure 9 summarises information available on education coverage by family income quintile for 2000.

In pre-school education, 0 to 5 years old, access by all socio-economic groups is limited, because the group of children from 0 to 3 years includes the substantial majority of children from all income levels who are raised within their families. Nonetheless, the highest income group clearly stands apart from the rest, with access double that of the poorest group: while half the children in the fifth quintile attend pre-school education, just one-quarter of the children

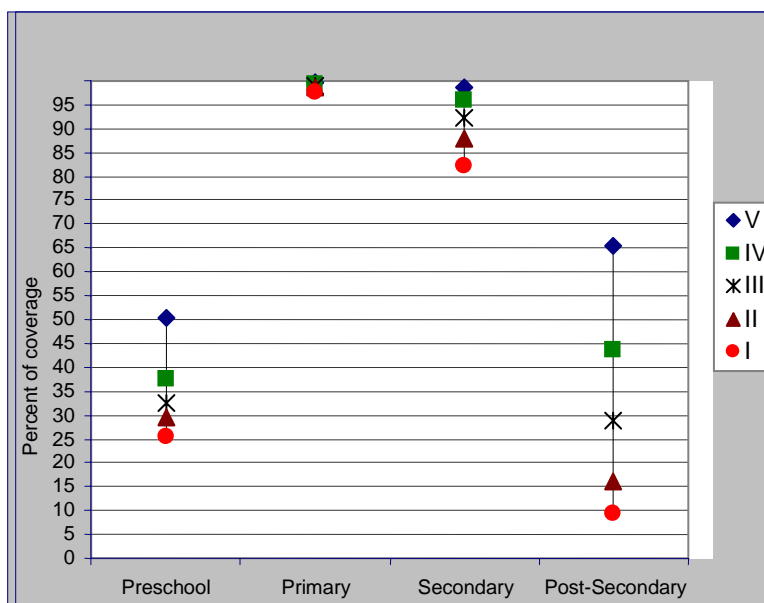
Figure 8. Teachers' confidence index



Source: Mullis, et.al. TIMSS (2000); Mullis and Martin, et.al. TIMSS (2000).  
 Note: The index is built on teachers' responses to the question how well prepared they feel to teach 12 different mathematics topics or 10 different science topics.

from the first quintile do so. In the period 2001–2006 there is a commitment by the present government to increase enrolment in pre-school level by 120 000, especially focusing on the most disadvantaged groups. The balance in 2003 is 63 000 new children participating in early childhood education and care programmes. A change in the Constitution in 2001 recognised pre-school education as the first educational level and a new curriculum is gradually being implemented considering different aspects such as teacher training, teaching materials together with communication strategies to encourage parents to send their children to available centres.

Figure 9. Educational coverage by family income



Source: CASEN Survey, Mideplan 2000.

In primary education, children from 6 to 13 years, access is broader for every economic group, becoming virtually universal for every income quintile (over 97%).<sup>17</sup>

Advances in equity of access and permanence at school are most clearly visible at the secondary school level (for youngsters from approximately 14 to 17 years of age). Firstly, coverage in 1990 for this age group was 77%, whereas this figure reached 87% in 2002. This drastic increase in coverage most benefited the two poorest quintiles of the school population. The difference in enrolments in secondary education between the poorest and the richest quintiles was reduced from 20% in 1990, to 16% in 2000; a comparison of the difference between quintile II (poorest) and quintile V (richest) shows a reduction from 19 to 10 percentage points in the same period (García-Huidobro, Bellei, 2003). In spite of these improvements, 15% to 20% of young people from the first and second quintiles still did not complete their secondary education. In an effort to

17 Chile achieved universal coverage of primary education in the first half of the 1970s.

combat this situation, the Government extended mandatory schooling to 12 years.<sup>18</sup>

Finally, the situation of post-secondary education, for young people from 18 to 24 years of age, is also rather specific. Traditionally, this has been defined as selective based on academic merit and, since 1981, also in terms of families' ability to pay. Inequalities in coverage reflect the different qualities of education available to different social groups, as well as economic selection. It should be noted that the very unequal presence of different strata in higher education occurs in a context of enormous growth during the past decade, from 245 000 students in 1990 to 461 000 in 2001, or in terms of coverage, from 14.4% to 28.4% of the 18-24 age group. This has translated into changes in the absolute numbers of students from the different income quintiles. In 2000, this expansion had a differential impact: massive for the wealthiest quintile (two of every three young people attend post-secondary education), broad for the following quintile (almost one out of two attends), and more restricted for the other three quintiles.<sup>19</sup> Although the two poorest quintiles have, as Figure 9 shows, only 10 and 15% participation in higher education in 2000, these figures indicate the participation has doubled since 1990 (Mideplan, 1990, 2000).

#### *Inequity in the distribution of results*

In the 1990s, learning results at the national level improved consistently, albeit slightly, both for primary and secondary education. These improvements were more significant for children studying in publicly financed schools and belonging to the groups with the most limited economic and cultural resources, as shown by the results of schools in the P-900 and Rural programmes, making it possible to state that, although moderate to date, there has been some progress in reducing the gap in learning results between the poorest and the rest of schools in Chile. This progress remains limited, however, in the face of the challenge of drastically reducing the gaps between the average learning results systematically obtained by the different socio-economic groups.

SIMCE groups schools completing the tests according to students' main socio-economic characteristics, the average years of study of the father and mother, family income, and a school vulnerability index. Table 13 examines

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18 A reform of the Constitution passed unanimously in Congress in May 2003, ruled that 12 years of education are required and as from 2004 on, secondary education will be compulsory.

19 Access to post-secondary education among the two poorest quintiles in 1990: one out of every 14 and one out of 25 students.

only the mother's education, family income and monthly expenditure on education, along with the presence of different socio-economic categories in the three kinds of schools for the 2002 SIMCE (fourth grade).

The table reveals the socio-economic side of the school system's tripartite structure: about 80% of enrolment coming from the low and low middle groups (42% of the total), have mothers who did not complete their education, family incomes ranging from CLP 100 000 to 130 000 per month and attend municipal education; the middle group (37% of total enrolment), is divided almost equally between municipal and private subsidised education (47.6% and 52.3%, respectively), and their mothers have 11 years of education, while family income is almost CLP 200 000 per month. The high middle and high income groups study primarily in private schools, be these subsidised or paid, and show substantial educational and income differences compared to the rest.

Table 15 provides average results on national tests for language, mathematics, and Understanding one's environment for fourth grade students in 2002, for each of the groups described above, by type of school attended.<sup>20</sup>

Table 13. **Characteristics of socio-economic groups and distribution of enrolment By type of school, SIMCE grade 4, 2002**

Socio-Economic group	Mothers' years of education	Income (pesos per month)	Family monthly expenditure on education	Enrolment and % in municipal schools	Enrolment and % in private subsidised schools	Enrolment and % in private paid schools	Number and % of group over total enrolment
A Low	7	100 563	10 029	22 324 79.4	5 775 20.6	0	28 099 (10%)
B Low middle	9	129 776	11 589	71 607 81.9	15 788 18.1	0	87 395 (32%)
C Middle	11	195 772	18 845	48 116 47.6	52 855 52.3	0	100 993 (37%)
D High middle	13	391 242	42 323	5 132 13.0	32 140 81.6	2 131 5.4	39 403 (14%)
E High	16	1 252 361	137 147	0	1 159 6.1	17 815 93.9	18 974 (7%)
							100.0

Source: SIMCE 2002 results, Ministry of Education, April 2003.

20 This analysis of grade 4 averages by socio-economic group and type of school is complementary to that of grade 8 done in Chapter 1 of this document. The authors are aware of the redundancy but wish to highlight the inequities that occur at the different levels of primary education in Chile.

Table 14. **Averages, by socio-economic group and type of school**  
Grade 4 – 2002

	Language And Communication			Mathematics			Understanding One's Environment		
	Municipal	Private Subsidised	Private Paid	Municipal	Private Subsidised	Private Paid	Municipal	Private Subsidised	Private Paid
A	229	216	-	223	210	-	229	218	-
Low									
B	232	230	-	229	227	-	232	231	-
Low									
Middle									
C	249	258	-	246	253	-	248	258	-
Middle									
D	276	281	282	270	275	277	275	280	280
High									
Middle									
E	-	303	302	-	299	301	-	300	300
High									

Source: SIMCE, Informe de Resultados (results) 2002.

For the set of low, low middle and middle income groups (79% of the country's students), it is clear that:

- the difference between the low and middle income groups for the same type of school ranges from 19 to 43 points. In contrast, the difference between municipal and private subsidised schools, for the same group, ranges from 1 to 13 points.
- Municipal schools obtain better average scores than private subsidised schools for the low-income group (an 11-13 point advantage). They perform similarly in the case of the low middle income group (1-2 points difference), while in the middle income group, private subsidised schools score better on average (7-10 points).

The evidence is similar for secondary education, with SIMCE results for the second year of high school in 2001, where the same pattern of larger differences in scores by socio-economic category than by type of school (*i.e.*, whether it is private paid, private subsidised or publicly funded) is also present.

Table 15. **Second year of high school, 2001**  
Averages, by socio-economic group and type of school

	Language and Communication			Mathematics		
	Municipal	Private Subsidised	Private Paid	Municipal	Private Subsidised	Private Paid
A	228	228	-	220	220	-
Low						
B	237	245	-	229	238	-
Low Middle						
C	274	272	-	272	267	-
Middle						
D	-	291	293	-	297	301
High Middle						
E High	-	-	303	-	-	321

Source: SIMCE, Informe de Resultados (Report on Results) 2001.

### *Shared financing and equity*

In the context of a tax reform at the end of 1993, private subsidised primary schools (but not municipal schools) and municipal and private subsidised high schools were allowed to charge families a monthly fee, which combined with the government subsidy in a shared financing formula. As the fee charged to families rises, the subsidy declines proportionately. In 2000, the total collected through this mechanism reached USD 152.5 million, charged by 1 530 schools participating in this financing system (with a total of 975 000 students, about 30% of total enrolment in the subsidised school system). That same year, the average monthly fee charged in the municipal system was CLP 1 840, while it reached CLP 8 125 in the private subsidised system.<sup>21</sup>

The success of this shared financing formula in adding private resources to education came with increased social segmentation of subsidised education (because it differentiated on the basis of the resources of the family), which went against criteria for equity. This led to a law being passed, which was voluntary in 1998 and compulsory from 1999 on, establishing *a grants programme in each school* (for the students whose families could not pay the required fees), with the minimum number of grants per school rising with the amount of the fee. The grants fund is fed by resources from the school operator, in the form of a percentage of fees charged families, and a small amount from the general government subsidy, which is used for full or partial scholarships to students from lower income families, as per Table 16.

21 Oficina de Subvenciones (subsidies office), Ministry of Education.



Table 16. Amount deducted and contribution to the grants fund in the shared financing system

Average fee tranche	Deduction	Fiscal Contribution	Operator's contribution
Up to 0.5 USE <sup>1</sup>	0%	0	5%
0.5 to 1 USE	10%	100%	5%
1 to 2 USE	20%	50%	7%
2 to 4 USE	35%	20%	10%

1. *Unidad de Subvención Educacional* (educational subsidy unit) – the State's monthly contribution per student in attendance. In 2003, in primary education it had reached CLP 12 246 per month. The second column of the table (discount) shows the percentage of the subsidy subtracted by the State, which rises with the average fee charged to families (identified in the first column). The Fiscal Contribution column indicates the percentage of the discount that the State is willing to place at the school's disposition to apply to the grants fund and represents a crossed subsidy from the families that pay the most to those that are charged less than average. The minimum grants fund in each school is the sum of the last two columns.

Two types of macro evidence point to the probable rise in social segmentation of the school system, despite the grants mechanism described above, which attempts to neutralise this. First, the number of private subsidised schools remained stable from 1985 to 1994. In 1994 (the same year the shared financing mechanism came into effect) the process of creating private subsidised schools resumed: from 1994 to 2001 just over 800 schools of this nature were created, bringing enrolment in private subsidised schools up from 32.5% in 1995 to 36.6% of the total in 2001 (while the percentage studying in municipal schools fell from 56.8% to 53.1% in the same period – see Chapter 1, Table 2)<sup>22</sup>. Similarly, according to data from the national household survey (*Encuesta Nacional de Hogares, CASEN*), while in 1987 (the first year for which comparable information is available) 29% of children from the wealthiest quintile attended municipal schools in 2000 this had dropped to 11% in 2000. This “flight” from municipal schools even affected middle income sectors (the fourth and third quintiles): in 1987, 54% of their children attended municipal schools, while in 2000 just 38% did so.

The different types of schools in Chile's tripartite system have attracted students from different socio-economic levels: along with the dynamics of demand involved in selecting schools (the principle of choice, based on the model implemented in 1981), schools themselves select families and students, thus reinforcing this tendency. There is well-founded evidence that private schools (because of their selection procedures, based on knowledge and

22 In 2000, 93% of schools and 90% of enrolment had shared financing (primary and secondary levels). There was no rise in the number of municipal schools in 1980-2000; and a slight rise in private paid schools between 1990 and 1995.

psychological tests, and expulsions that result from minimum performance requirements and drastic disciplinary measures) select the most capable students from among their peers and avoid students with learning or behavioural problems.<sup>23</sup> The effect of “skimming off the cream” from municipal education would affect this sector’s students: with the best students leaving for the new sector, the learning conditions for those left behind deteriorate, with no advantages to offset this in the learning produced by private, subsidised education (Carnoy and McEwan, 1997; Hsieh and Urquiola, 2001; Gonzalez, 2002).

### ***Education’s inequity as an educational policy problem***

The outstanding challenge of educational equity as a political priority is a double one: to increase the impact of policies aimed at expanding the opportunities to access and permanence at secondary and higher education for the poorer groups, and to effectively tackle the issue of social segmentation of school contexts and learning results. In this regard, although effective, school-centred affirmative action programmes are not sufficient to redress inequalities which are more structural in nature and demand new and more systemic.<sup>24</sup>

### ***Compensatory policies and the need for new approaches***

The public resources assigned to the school system were, in the 1990s, provided through two channels: the school subsidy and direct investment and programmes in schools. Virtually nothing within the school subsidy discriminates in favour of those most vulnerable, because it consists of the same amount per student (exceptions are a small number of rural enrolments and students with some kind of disability; none of these exceptions considers family poverty). Similarly, not all direct investment and other programmes should be considered to focus on equity. For example, investment in school texts, computers, infrastructure and equipment are generally universal or so massive that they do not include any component of affirmative action.

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23 See, for example, *Los efectos del sistema de subvenciones escolares en el logro estudiantil: un estudio empírico* (The effects of the school subsidy system on student achievement: an empirical study), Martin Carnoy and P. McEwan, Stanford University, 1998; and Gauri, Varun, *School Choice in Chile. Two decades of educational reform*. Pittsburgh U. Press. 1998So.

24 Since the mid 1990s several studies have raised the equity issue. Some of the studies are: Gauri, Varun. 1998; McEwan and Carnoy 2000; Delannoy, Françoise 2000; García-Huidobro and Bellei, 2003.

An analysis of public expenditure on education reveals these insufficiencies.<sup>25</sup> For 2000, it is estimated that 16.6% of total public expenditure on the school system included some component destined to focus on priority groups (including pre-school education, non-pedagogical assistance such as meals, and special education for those with disabilities), while 83.4% of public resources contained no affirmative action criteria for assignment (essentially the school subsidy). Trends over time in this distribution have also worked against equity: while resources for programmes focusing on vulnerable groups rose at an average annual rate of 20% during the first half of the 1990s (1990-1996), in the second half of the decade (1996-2000) they rose just 1% annually. In contrast, the school subsidy rise has been more or less stable throughout the decade, at an annual rate of 11%.

### *Differentiated pro-retention subsidy*

Aside from focused programmes, and to improve measures that attempt to offset socio-educational inequalities, in 2002 a law established new rules that affect the structure of permanent financing of schools serving the poorest population..

To guarantee 12 years of education to the whole population, a law passed in 2002 establishes a differential subsidy for the school population from the poorest families. This is an additional, focused subsidy that is added to regular ones and the whole set of state support that involves financial and technical reinforcement to the free or low-cost schools that the vast majority of the population attend. This subsidy connects two priority policies:

- reinforcing the successful retention of students, and
- reinforcing priority assistance provided to those living in extreme poverty.

This subsidy introduces new ways of applying social and educational policy and reinforces others that have enjoyed widespread support:

- it focuses on achieving a specific objective.

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25 *Estructura institucional, recursos y gestión en el sistema escolar chileno* (Institutional Structure, Resources and Management in the Chilean School System), Pablo González, Proyecto CRESUR 2002.

- it focuses on a clearly identifiable population requiring priority assistance.
- payment is directly linked to results, in this case, assuring the students' continued presence in school.
- it combines the State's pro-active role with the initiative of public and private operators.
- amounts rise as students advance in school, thus encouraging the completion of studies.
- it reinforces the responsibility for attracting and retaining students from the most needy sectors.
- it recognises and encourages a commitment to look after indigent groups.

From the budgetary point of view, this subsidy will start having an impact in 2003 and will rise to full application in 2007. For 2003 this represents resources of about USD 20 million. This benefits young people from very poor families who continue to study from grade 7 on to the fourth year of secondary school, which should represent 126 000 young people by 2006.<sup>26</sup> School operators who receive these students will receive an additional annual, pro-retention subsidy according to the following scale: USD 70.4 for grades 7 and 8; USD 112.6 for first and second years of secondary school; USD 140.8 for third and fourth years of secondary school; and USD 169 per year per student graduating from the fourth year of secondary school.

In summary, the balance regarding equity is multidimensional and includes results that are not without their contradictions. In the last decade there have been major advances regarding equity of access and permanence in education, particularly at the secondary and tertiary levels. There has also been progress in the learning results of the poorest 15% of enrolments, with reductions in the gap that separated students in this group from the average results of the country in primary education. On the negative side, initial but consistent evidence points to an increased social segmentation of the school system, as a result of the joint impact of the preferences of families choosing schools and the shared funding

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26 School operators with students in seventh grade to the final year of high school from families in extreme poverty will receive this additional subsidy early in 2004. For 2003, this should benefit an estimated 33 748 students.

scheme. In this regard, the resources assigned to affirmative action programmes have not been sufficient to compensate for the differences in resources channelled into schools from families and through state subsidies. This has led the Government to attempt new mechanisms, related to 'rules of the game', such as the one described above of a differentiated per-student subsidy, which should add decisively to the impact of compensatory programmes to redress unequal learning opportunities at schools, and the social segmentation of their enrolments.

## **Administration and management**

### ***Municipal administration***

Municipal education includes 58% of the country's schools and serves 53% of national enrolment. This difference is due to the many small administrative areas (*comunas*) operating rural schools, which are exclusively municipal. Sixty eight percent of students in municipal schools come from the poorest 40% of the population. In fact, 72% of all children and young people from the poorest quintile attend municipal schools. By law and in practice, municipal education must guarantee compliance with free, compulsory education as established by the national constitution.

### ***The educational decentralisation process in Chile, 1980-2000***

Decentralisation of education in Chile, began by the military government in the early 1980s, formed part of a larger trend toward decentralising the State. For ideological reasons, associated with dismantling state influence and political authorities, and economic goals, associated with the neo-liberal idea of making social service provision more efficient and competitive, the military government redefined the country's territorial administration and transferred responsibility for most social services, including education, to the municipal (local city) governments, with national authorities destined to play a role in financing and supervision. From 1974 to 1979, the military government divided the country into regions and extended municipal authority.

In this context, starting in 1980, the government started to transfer administration of schools from the Ministry of Education to municipal governments, a process that culminated in 1986, shortly before military rule ended. This shift in public school administration came with changes to the financing system (involving payment of a per student subsidy) and encouragement to private players to provide public educational services by making the financial systems for all privately and municipally run schools, receiving public funding very similar.

Institutional design was based on three main principles. First, that municipal governments were only responsible for administration, while educational aspects remained under the Ministry of Education, through its recently created Provincial Departments. Second, decentralised administration was supposed to be more efficient, because it was subject to financial rationalisation imposed by the subsidy mechanism. Third, by allowing families to choose between public and private schools, and within these categories, service quality was expected to improve overall, with deficient schools eventually closing down for lack of enrolment.

When the first democratic government assumed power, the general evaluation of this “municipalisation” process was negative. Criticism focused on its lack of legitimacy: it was imposed by an undemocratic government, municipal authorities were not elected by citizens, and as part of the process teachers lost most of their traditional benefits and saw their wages fall substantially. A second problem area involved serious financial deficits caused by falling enrolment, the decline in the real value of the school subsidy, and the inefficiency of most municipal administrations. Finally, at a more structural level, problems arose from the difficulty of working within the dual administrative role of local municipalities and the Ministry of Education’s technical-pedagogical management and the small size of most administrative units (*comunas*), which made it impossible to achieve the minimum threshold necessary for institutions of this nature to operate, particularly in rural areas.

The country’s elected authorities surprised most of those active in education and opted for maintaining and reinforcing the decentralisation process. The principles behind this decision, however, were radically different. It was thought that decentralised education would be better able to connect with the population’s needs and demands and at the same time would be more accountable to citizens. Democratisation of municipal governments, with elections of authorities and the institutionalisation of citizens’ participation in the early 1990s were considered basic conditions for beginning the process of legitimising the “municipalisation” process.

Throughout the decade, elected governments have applied a significant set of changes to the administration and financing system, to resolve some of the problems detected. Management of teachers has shifted from a rigid and protectionist approach of the early 1990s to a more flexible, rational form since mid-decade. The amount involved in the school subsidy has risen steadily and strongly, guaranteeing financing for all wage increases and the recovery of purchasing power. At the same time, the threshold for financing rural schools with structural enrolment problems was also raised. City governments have also received planning instruments to ensure more rational resource management,

with the most important being the annual plan for developing municipal education (*Plan Anual de Desarrollo Educativo Municipal* – PADEM).

The PADEM has been legally required from all municipal governments since 1995. Annually, each municipality must provide a school-by-school evaluation, an analysis of supply-demand conditions, explicit goals for the municipality as a whole and each school, action programmes for the next year, budgets that include municipal investment, income and expenditure on education. Finally, these annual plans must define teaching and non-teaching staff. Although conceived as a comprehensive educational planning tool, the PADEM's most relevant function has been to rationalise the number of teachers, correcting this according to enrolment in municipal schools.

Public policies in the 1990s were not limited to administrative and financial areas, because one goal of the long-term effort to significantly reform education involves consolidating decentralisation, specifically in education. Actions to improve the quality of teaching are based on reinforcing schools' own skills. This involves bringing to bear a whole range of pedagogical management instruments: every school must have its own school educational project (*Proyecto Educativo Institucional* – PEI), which organises and orients the educational community; most municipal schools have designed and implemented educational improvement projects (*Proyectos de Mejoramiento Educativo*, financed by the Ministry of Education), managed by their own teams of teachers; teamwork involving co-operation among technical and teaching staff and management has become a normal part of school tasks and management in many primary and secondary schools; school principals have been granted more authority and legitimacy in deciding management and financial issues and their renewal has been encouraged using public competitions. Although all these actions aim to strengthen municipal schools, only some have been carried out by the Ministry of Education in co-operation with municipal governments, while others have given rise to conflicts, where the ministry dealt directly with schools, without consulting municipalities.

#### *Municipal management of education: current status*

This process of “municipalising” education has now accumulated two decades of experience and in many senses has followed the development of municipalities themselves, yielding an enormous range of sizes, resources and skills among the different municipalities. Similarly, after more than ten years of implementation, the Educational Reform has become tremendously complex, with the original challenges involved in pedagogical change being joined by more structural reforms, such as the new curriculum and the massive application

of the full school day. Both components make it difficult to reach a universally valid diagnosis for the current status of municipal education.

Because municipalities' financial management skills may vary widely and because these skills are closely associated with municipalities' size and wealth, the latter by no means guarantees a good performance in education, although obviously the lack of resources makes their management much more difficult.

### *Resources and municipal education*

Chile's 342 municipalities face different problems with regard to financing education. In general, current expenditure on municipal education is financed using the subsidy, combined with the municipality's own resources. Among those contributing their own resources, a total of 84 municipal governments have made education a major priority, thus investing in service improvements.

Among the rest, over half have used their own resources solely to complement the subsidy and cover the regular financial costs of municipal education.

The most critical cases include some of the country's poorest schools, with a very high turnover in their population and therefore declining enrolment, which substantially reduces the financing available to them and may involve their assuming very long-term debt.

This critical situation particularly affects some 70 municipalities in isolated areas with small populations, mainly in very vulnerable conditions.

Finally, another factor affecting many municipal governments is the type of management applied to educational service and municipal resources, which should be analysed independently of the resources available for education. Situations in this case vary enormously according to the type of management applied. In these cases, any improvements to educational service will require changes in this area.

### *Management skills*

The municipal administration of education varies considerably in terms of the technical skills and the structural characteristics of the bodies to which they belong. The most significant variable in this sense is the size of the municipality's population. This determines the number of students and the amount of money the municipality has available to it. In larger municipalities, economies of scale make it possible to accumulate enough resources to sustain



large and well qualified staffs that focus on administering education, which often become a whole subsystem within the municipality. Also important and associated with the size variable is the level of wealth in the municipality. In contrast, small or rural municipalities can barely maintain a small group of staff who are often not dedicated solely to education.

These unequal levels of management skills determine the wide range of ability to take full advantage of the opportunities and tools available to municipalities through the Educational Reform or other public investment agencies. Thus, for example, the PADEM's role ranges from genuine municipal-wide education plans to very simple instruments for distributing teaching staff. Something similar has occurred with the ability to design investment and improvement projects.

The municipalities with the most developed educational management skills have started to move into an area that was formerly considered the sole responsibility of the Ministry of Education: technical-pedagogical matters. Many municipalities have formed technical supervision and advisory teams that support work in the schools, generate projects to improve quality, supervise the development of reform programmes, and create competitive funds and other incentives for teachers and schools. Some municipalities have their own plans for upgrading teachers, often through hiring external services. In recent years, working agreements between some municipalities and provincial educational departments have allowed the latter to delegate some of their traditional supervisory and technical assistance functions to the former.

### ***Critical knots and problems in municipal education***

#### *Equity*

The fact that school management is in the hands of the respective municipalities generates a basic problem mentioned above: the poorer and more isolated the school population, the more it needs the best educational service, but nonetheless in these conditions education tends to fall into the hands of those least able to handle it. This inequality affects both technical skills and the availability of financial resources.

However, this is not the greatest source of inequity in the education system financed using public resources. Private subsidised schools are not required to admit all applicants, quite the opposite, most of these schools select children based on testing their skills and knowledge, and they expel students who perform or behave poorly. They also require that parents contribute financially. In other words, private schools, to maximise the benefits of working with public

resources, seek to avoid as many problems as possible with their students. Municipal schools, in contrast, as guarantors of all children's right to education must enrol and maintain all students and, moreover, receive those students expelled from the private system. The systemic application of this rationale for more than two decades has "skimmed the cream off" the municipal sector in favour of private schools, which have taken the best students. This has also generated a significant number of schools that focus on social, behavioural and learning problems.

In other words, municipal schools have more responsibilities and must assume tasks that are much harder than those of private subsidised schools, for which they nonetheless receive the same resources.

### *Responsibility*

The relationship between the municipal operator and the school itself is marked by several key characteristics. The operator manages resources and the schools under its authority with regard to the specific issues involved in educational service, with direct support from the Ministry of Education in the most vulnerable sectors.

Educational policies, financing, pedagogical and technical supervision are provided by the Ministry of Education and not the municipal operator.

There is some dissociation between the administration of resources (operator) and the administration of the educational service (principal), along with teaching as defined by the school educational project (teachers).

This is clear, for example, when principals try to increase the number of teachers at a school or reduce the number of students per course, which is then resisted by the operator, because this would increase costs. Similarly, if financing and expenditure are measured using the school as cost centre, revealing a reallocation of resources by the operator makes the system look inefficient, as if all the schools were independent units that could function without an operator, ignoring the wide range of students' characteristics, geographic location, and the operator's attributes for managing resources.

This sort of dissociation, among others, produces some setbacks in the success of policies and programmes for improving educational quality and equity, developed by the Ministry of Education.

## *Coherence*

The argument that it is possible to separate administrative from technical-pedagogical aspects in dealing with schools and assign them to structurally separate agents is based on a fundamental misunderstanding of the nature of educational management. There is no way of separating “technical” from “administrative” measures. In practice, all administrative measures have technical effects and all technical decisions involve administrative consequences. Rather than two different types of measures, these are actually two dimensions of every one of the decisions that must be made at different points in the municipal education decision-making system. Thus, for example, hiring teachers is at once the most important administrative commitment and the most educationally decisive step.

This also applies to educational improvement projects, decisions to invest, purchase educational materials, etc.

The fundamental division that has assigned one of these dimensions to the municipality and the other to the Ministry of Education since 1981 has not contributed to improving education itself or a more efficient management of its resources and, moreover, it has diluted public responsibilities.

### ***The basic unit of administration***

To consider municipal education as a small system goes against certain guidelines for educational policy in recent years.

By accepting a strong recommendation in this sense from the National Commission for Modernising Education in the mid-1990s, the educational reform has defined the school as the system’s basic unit. This is expressed in the idea that every school community should have its own institutional educational project (*Proyecto Educativo Institucional*), but the decisive factor in its expression occurs at the level of each school’s management.

From this perspective, the Ministry has tried to provide the principals of municipal schools with more direct access to resources to help them manage these more effectively and relate them more directly to the community’s needs. The law approving the full school day in 1997 opened the way for municipalities to make school principals directly responsible for managing ministry programmes to improve the quality of education, donations and parental fees charged as part of shared financing. However, it has not been possible to extend this to the subsidy, because this would conflict with the municipality’s control over teaching staff.

Moreover, only the mayor can exercise this power to delegate on the municipality's behalf and this has limited the use of this faculty.

In any case, whether by delegating responsibilities to principals or not, municipalities could administer each school as an independent cost centre. Under this rationale, some economies of scale achieved by the municipalities (ranging from joint financing of technical personnel to simply transferring resources from schools with higher enrolments to smaller ones) should continue their development as long as strategic decisions in social matters that frame this type of decisions are assessed by regional authorities within an on-going regionalisation process.

### *Scale*

As mentioned, some of the main problems with municipal management are associated with the size of the administrative area served. Many municipalities are not large enough to have the human resources necessary to respond well to the needs of managing the school system, and face very complex problems. The reality is that three-quarters of the country's municipal areas have less than 50 000 inhabitants and two-thirds of these have less than 25 000. To date, there are no municipal associations that combine their resources to achieve a viable scale for ensuring the efficient and effective management of small schools in relatively isolated areas. Moreover, many municipalities function on too basic a level to be able to guide educational activity in high schools, whose social and institutional horizon goes far beyond the limits of the municipality. In contrast, in very heavily populated municipalities in metropolitan areas, the number of schools managed by a single municipality can prevent a sense of identity and hamper close co-operation with individual schools.

### *School management*

In the 1990s, the different improvement programmes encouraged each school to create management teams as part of a strategic planning process to develop their institution's educational project (*Proyecto Educativo Institucional* – PEI) and self-evaluation processes in all high schools participating in MECE – secondary and P-900 schools, to systematically and constantly review school processes and results in order to better organise efforts to improve schools and high schools and be publicly accountable to the educational community for the results and achievements of each year's management effort.

At this point in the reform, policies in this area focus primarily on building a system that *ensures quality* by making operators and schools assume more

responsibility for their own educational results and strengthening principals' leadership and professionalisation.

In this field of ensuring quality, based on experience in improvement programmes to date, the Ministry is in the final stages of preparing a school management quality model or "good school" that can serve as the basis for introducing an evaluation system into the schools through self-evaluation and external evaluations by expert panels. This system will allow schools and high schools to identify strengths and areas requiring improvement, and to build and develop improvement plans to guide the work of supervisors and operators' technical teams in their support for and advice to schools to ensure ongoing improvement. In the second half of 2003, a pilot plan will be applied in 70 municipal schools, and from there will be expanded in 2004 (the inclusion of another 500 larger schools in this system is under study).

In the field of strengthening leadership, principals will have more authority<sup>27</sup> thus increasing the autonomy of schools and high schools; through a participatory process involving the different actors within the school system, performance standards for principals will be developed during the second half of this year. The Ministry is seeking to establish a system for evaluating their performance and define a process of prior accreditation of skills that will help to reinforce initial training and experience of these professionals.

## **Technical Education**

During the 1990s, high school education underwent a curricular reform that particularly affected technical-professional (vocational) education. This stream grew to represent 44.2% of total secondary level enrolment. The fundamental policy issues in this sphere have been quality, connectivity and coherency between secondary level technical training and the tertiary level; and between both and labour market requirements. Moreover, the insufficient coverage of post-secondary technical training and serious deficiencies in training technical instructors remain problems to be dealt with.

### ***Technical education at the secondary level***

Table 16 indicates that in the 1990s secondary professional-technical education (SPTE) enrolment rose in absolute terms from 255 000 to 376 000 students, (47%) and in relative terms from 35.4% to 44.2% of total secondary education. This growth reflected increases in the inclusion and retention of

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Draft law, currently being debated in Congress.

young people from the poorest quintiles in secondary education (the first generation to reach high school) and in the context of comprehensive programmes for improving high school level opportunities.

Table 17. **Secondary education enrolment, by type, 1990-2001**

Year	Total Sec. Ed.	Coverage (percentage, 14-17 years)	Scientific Humanistic	Percentage	Professional- Technical	Percentage
1990	719 819	77	464 423	64.5	255 396	35.4
1996	739 316	81	415 919	56.3	323 397	43.7
2001	850 713	85	474 641	55.8	376 072	44.2

Source: Ministry of Education, *Compendio de Información Estadística* (statistics yearbook) 1997, 1998; *Estadísticas de la Educación* (education statistics), 2001.

### *Secondary School improvement programmes and curricular reforms*

In 1990, although there was a relatively high level of consensus about general deficiencies in secondary education, there was no clarity about their magnitude nor the specifics in terms of the two streams making up this level. The government opted for a process involving extensive research and an effort to identify the national community's expectations, requirements regarding secondary education, and possible changes, through a broad participatory process in the framework of the Programme for Improving Educational Quality and Equity (*Programa de mejoramiento de la calidad y la equidad de la educación* – MECE).<sup>28</sup>

Based on this diagnosis, the government decided that the magnitude of the problems required a profound reform of secondary education (changing organisational structures, curricula, evaluations, external connections and other macro level aspects). This involved three processes:

- implementing the Programme for Improving Educational Quality and Equity (MECE-Secondary).
- expanding school time available through application of a full school day.

28 This programme had a budget of USD 207 million and lasted six years, with support from the World Bank (17% of financing and ongoing technical assistance), and involved investment in text books, information technology, libraries, competitive grants funds for teachers' initiatives, workshops for teachers and young people, and technical assistance networks in high schools.

- and reforming the secondary school curriculum.

*Reforms to the secondary professional-technical education curriculum*

The evaluations from the early 1990s on the state of secondary professional-technical education underlined critical problems, particularly:

- Total deregulation in the 1980s produced exaggerated and unjustifiable growth in specialties with a wide range of study plans and programmes, and little innovation.
- There was obvious dissociation between many of the specialties offered and the labour market needs, the needs of regional development and students themselves. Most schools maintained the expected link with business solely to make professional practice possible, because these were required to receive a secondary level technical diploma.<sup>29</sup>
- On many occasions, growth in enrolment meant responding to social demand for this type of secondary education, without ensuring sufficient quality in the supply.
- The interruption in technical teacher training in 1979 meant this role was increasingly played by other professionals. Thus in 1999, only 53% of the teachers working in this field had education degrees, mostly in general teacher training; of the remainder, 27% were university professionals, while 17% were graduates from SPTE schools who had received authorisation to teach from the Ministry of Education. This range of teachers was not necessarily negative, because many schools included the perspective of teachers who shared their educational obligations with work in the productive sector.
- There was a noticeable contradiction between expert opinions that proposed a wide range of technical training and socio-political demand for very specialised training that would make early entry into the labour market easier. This was apparent in many social groups, especially working class families, but also in some political and professional circles. The process of designing the reform had to

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29 Economics Department, University of Chile (1998), *Evaluación del marco institucional de la Educación Media Técnico-Profesional*, Ministry of Education, Santiago.

consider timing and procedures to generate the necessary agreements to establish the foundations and options presented below.

Three questions decisive to organising secondary technical education were: where to locate work-related preparation, how early or how late to offer this, how separate should preparation for work be from academic education in general? Chile's reforms in the 1990s responded as follows. On the first question, the answer tended to conserve the existing institutional limits: specialised work-oriented training should take place in professional-technical schools, at the high school level, separate from those where general education takes place. On the second and third questions, reforms included some decisive innovations, postponing the start of specialisation for two years (from 14 to 16 years of age, or from grade 9 to grade 11) and, as a result, reducing in both time and content the gap between general education and job-related specialisation.

Curricular reforms in secondary education changed the traditional distinction between general and vocational education, establishing the categories: *general education* and *specialised upper secondary education*. This change redefines the difference between the two types of secondary education, establishing a new kind of general education for the first two years, regardless of the type of high school (general or professional-technical); thus changing the sense and content of the first two years of professional-technical education; opening new options for differentiation in the last two years of academic scientific-humanistic modality, which previously did not offer these possibilities; and, finally, drastically reducing the enormous range of options in the differentiated cycle of the professional-technical modality (going from 400 to 46 areas of specialisation).

The concept of *General Education* significantly redefines the division between academically oriented general education and professional-technical education, because it establishes that for the first two years of secondary education students will receive the same training. It also defines common objectives and contents for much of the last two years (specifically for the subject areas of Spanish, mathematics, history and social sciences, and a foreign language).

*Specialised upper secondary education* brings together the compulsory objectives and contents for the different areas of differentiation or specialisation offered by secondary education in its two modes, as of 2001. It starts in grade 11 (the third year of secondary school) and the specialisation programmes offered vary from school to school according to students' aptitudes and interests and schools' curricular definitions.



In the case of secondary professional-technical education, the differentiation refers to specialised training, which is defined in terms of final objectives (organised into exit profiles) corresponding to 14 occupational areas and 46 specialisation options, as shown in Table 18. The 14 areas or occupational groups under which final objectives are organised are: logging, agriculture, food, construction, metal-working, electricity, fisheries, mining, graphics, garment industry, administration and commerce, social projects and programmes, chemicals, tourism and hotels.

The new specialties offered are based on a General Preparation that is substantially more robust than the previous one, with specific, practical contents oriented to preparing for working life overall, rather than just “a job” or the technologies on which it is based, which may or may not last.

The process of reforming SPTE has relied on developing *labour competencies*. These are expressed as characteristics possessed by a person capable of performing an integrated set of tasks competently, under real working conditions. The curricular instrument used to structure the labour competencies to be developed within secondary technical education is a *professional profile*, which describes the tasks to be carried out, grouped by competencies (more or less permanent functions), and specifies the criteria necessary to evaluate their competent implementation, including aspects such as organisational ability, compliance with specifications, resource optimisation, occupational health and safety, need for co-operation, relationship with the surroundings, and response to contingencies.

Graduate profiles should meet quality standards in line with a world of production consistent with a competitive, internationally oriented economy. At the same time, they represent instruments for promoting equity, as they guarantee that each area of specialisation is founded on the same nationally shared common basis, which define the essential, minimum information that students anywhere in the country studying this specialty must master. Finally, there are also cross-cutting objectives for professional technical training, oriented to life skills and not just getting a job, including the ability to plan and manage, personal initiative and teamwork, an entrepreneurial spirit, and relationships based on mutual trust and responsibility.

The definition of performance profiles for graduates in these specialties arose from a lengthy joint effort (from 1995 to 1997), involving the relevant business and educational spheres. The decision to establish *graduate profiles* for each specialty, with support from key players in the relevant productive sector, made it possible to develop a common basis for education, the result of a national consensus between *educational and productive systems*.

Table 18. **Secondary-professional technical education enrolment by specialisation, 2001**

Specialisation	Enrolment	Percentage
<b>Commercial</b>	161 360	42.9
<b>Industrial</b>	126 721	33.6
1. Metalworking		
2. Electricity		
3. Chemicals		
4. Construction		
5. Logging (except forestry)		
6. Mining		
7. Graphics (except drafting)		
<b>Technical</b>	59 871	15.9
1. Food technician		
2. Garment industry		
3. Social projects and programmes		
4. Hotels and tourism		
5. Graphics (only drafting)		
<b>Agriculture</b>	21 315	5.6
1. Forestry		
2. Farming and cattle raising		
Fisheries	6 805	1.8
<b>Total</b>	376 072	100.0

Source: Mlnistry of Education, *Estadísticas de la Educación. Año 2001 (Education Statistics)*, 2002.

Finally, an additional element in transforming the SPTE in the 1990s was improving the supply of technical training that alternates work at school and in a company. The Ministry has encouraged a *dual model*, adapting experience from Germany to Chilean conditions.<sup>30</sup>

### *Technical training at the tertiary (post-secondary) level*

For technical training at the post-secondary level, Chile suffers from a steadily declining enrolment. The inclusion of short technical programmes at universities and professional institutes has not been enough to offset this decline. Total enrolment in programmes offered by technical training centres (*Centros de Formación Técnica – CFT*) has fallen from 77 779 students in 1993 to 53 895 in 2001.<sup>31</sup> This decline contradicts trends in most OECD countries

30 As of 2002, there were 149 dual high schools, in Chile's 13 regions, with total enrolment in grades 11 and 12 of 14 706 students, and the participation of 4 946 companies.

31 Ministry of Education, *Estadísticas de la Educación* (education statistics), 2001.

where higher education has diversified, where shorter non-university professional-technical programmes have grown, and there is a very different proportion of professionals to technically trained individuals. This trend also contradicts the rising enrolment apparent in SPTE.

The absence of policies regarding *post-secondary technical training* has affected the quality of graduates and their low social standing has also contributed to a steady decline in enrolment. The need to finance themselves weighs on these institutions, as they receive a population with very limited economic resources and must deal with the high costs associated with industry-related programmes. This has led to the proliferation of many programmes that are cheap to implement and not very sophisticated, associated mainly with the service sector. Only in the past three years has the Ministry of Education opened a line of development and financing through the competitive fund included in the MECE-Higher Education programme and through grants to students at technical training centres (6 000 in 2002).

The curricula of secondary professional-technical education and programmes at technical training centres (which are post-secondary level) obviously overlap, another factor contributing to low enrolment of technical high school graduates in the technical training centres (CFT). One study found that five years after graduation, 30% of SPTE graduates had carried out post-secondary studies, with just 4% of all technical high school graduates going on to study at a CFT.<sup>32</sup>

Education offered by the CFT seldom takes into consideration aspects such as the dynamics of employment in different sized firms, the corporate mentality and its variations, the progressive access to information technology and automation, the demands involved in quality standards or priority tasks for environmental preservation.

#### *Technical education teachers*

A marked weakness and enormous range in the initial and on-going training of professional-technical teachers is also apparent, and lies at the basis of improving the quality of the educational supply at this level and training itself. Universities ceased to train technical teachers in the mid-1970s and those who today work in high schools, technical formation centres or training

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32 Economics Department, University of Chile, *Evaluación del Marco Institucional de la Educación Media Técnico-Profesional*, Ministry of Education, Santiago, Chile, 1998, p. 67.

institutes have no supply of training or upgrading in professional-technical pedagogy, consistent with current definitions in these areas.

Most teachers at professional-technical high schools were trained as scientific-humanistic teachers. In 1998, 70% (14 820) of the 21 113 teachers working at professional-technical high schools only taught students in this type of education. Similarly, 3 309 teachers had specialties (22%), with 89% holding a teaching degree in secondary education.

In terms of these teachers' training and upgrading, the current supply is minimal and consists mainly of basic upgrading to prepare teachers for new programmes of study.

### *Technical education in the framework of lifelong learning*

Faced with the lack of integration inherent in the different subsystems involved in technical education, labour training and adult education, the Government (Ministry of Education, Ministry of Labour and Ministry of the Economy) designed and implemented a lifelong learning and training programme, *Chile Califica* (Chile qualifies), in 2002, which is projected to complete a lifelong learning system toward 2007. This programme proposes:

- To improve general training and job-related skills for the country's least literate labour force, offering opportunities for upgrading studies and training.
- Improve the quality and integration of technical training at every level and extend coverage of technical training at the post-secondary level.
- Develop an integrated lifelong learning and training system that offers people lifelong opportunities to acquire the labour competencies and technical training necessary to enter, remain in, re-enter and develop in the world of work, incorporating new skills and receiving social and professional recognition for same.

The lifelong learning and training programme (*Programa de Educación y Capacitación Permanente*) will develop a series of strategies to deal with technical training's quality and coverage. Some of these form part of people's continuing learning instruments (technical training paths and measures to ensure the quality of technical training), while others belong to incentive strategies for encouraging improvement and pertinence (projected networks for articulating technical training and upgrading technical faculty).

The programme's main challenge in this sense consists of generating and validating a set of instruments that make lifelong learning easier for people, providing opportunities to pursue flexible training and competences certification paths, and access to information, so they have the chance to improve their qualifications and find the way open to improving their participation and mobility within the workforce.

This involves developing instruments for evaluating and certifying labour competences and developing technical training paths and a system for ensuring the quality of the technical training supplied by secondary professional-technical schools and the technical training bodies (*Organismos Técnicos de Capacitación*, OTEC), combined with a continuing education information system.

### *Training of technical teachers*

This line of work should respond to the need to have consistent and systematic training and upgrading policies and opportunities available to technical teachers in the country. To ensure the success of this line of work, teacher training institutes require new capacities, so that their initial and upgrading training programmes start from a common and contemporary basis in the field. This involves recognising that for over 25 years the country has neglected academic reflection and practical work in training technical educators.

Initially, a programme for installing the capacities that are sought will be developed in 23 universities that have expressed their interest in participating in the programme to train and upgrade technical instructors in curricular, pedagogical, didactic matters and evaluation techniques intrinsic to this type of training, in effect in countries that have demonstrated their quality in these areas and taught by recognised international experts.

## **Evaluation**

The guiding principle behind the current phase of educational policy is that it must not only support the actors and processes that define learning opportunities within the school system, but also guarantee the quality of results. This makes the effective use of three tools crucial: *information, evaluation and result-oriented incentives*. From this threefold perspective, evaluation plays a key role.

This final section provides a summary of what the Ministry of Education has been doing in terms of national evaluations of learning results and the current and potential uses for this information, by a wide range of actors.

## ***SIMCE tests***

Since 1988, the system for measuring educational quality (*Sistema de Medición de la Calidad de la Educación – SIMCE*) tests all the students in a certain grade level (from 220 000 to 260 000) on an annual basis, alternating between fourth grade, eighth grade and the second year of high school. Its design and administration is the responsibility of the Ministry of Education's curriculum and evaluation unit and its main purpose is to generate reliable indicators on teaching quality. The evaluation system that is used is the same for every school in the country and the test is managed by external evaluators. The scores on SIMCE tests reveal performance in language and mathematics (and, in some years, sciences), for the set of students from:

- each school, compared to previous years and other schools.
- and each class within the same school. Scores are reported using a standard scale whose mean is set at 250 points in the initial measure that constitutes the basis for comparison with the following tests, with standard deviation of 50 points.

Tests started to include open-ended questions and introduced the methodology known as Item Response Theory (IRT) in 1998. This last offers several advantages over the previous model (classical measurement theory): it is more precise, distinguishes better between schools, permits interannual comparison, and controls for test bias (gender, socio-economic). The IRT method, however, also involves a sophisticated method that makes the SIMCE less comprehensible for the general public and teachers.

## ***International measures***

Chile resumed its membership in the International Association for the Evaluation of Educational Achievement (IEA) in 1997 (it had been a member since the early 1970s), and since then has participated in the 1999 TIMSS and 2000 Civics measures, as well as the SITES (on information technologies in education: see *Enlaces* section) by this body. It is participating in the next TIMSS (2003) study, as well as the OECD's PISA Plus (Programme for International Student Assessment) study, whose results were published in July 2003.

SIMCE's methodological progress is closely linked to this participation in international evaluations.

## *Current uses of the SIMCE*

Unlike the 1980s, when the idea (never applied) was simply to inform consumers, the range of uses for the SIMCE has expanded enormously in the 1990s, with no systematic study of this phenomenon to date. Some information on how SIMCE is used follows.

### *Ministry of Education: policies*

In the 1990s, educational policy was defined by its focus on improving learning, which turned educational quality and achievement of better results among students into a central subject for debate, as never before in national policies. In this turnaround, SIMCE has been the flagship effort in the Education Ministry's efforts to place student learning at the centre of this process. Its multiple uses are:

- *Focusing intervention:* It helps to detect those schools with the most problems in educational quality, making it possible to design and apply special support programmes from an affirmative action perspective. This focus took the form of the P-900 and High School for All programmes; SIMCE data has also been useful when assigning priorities for resources going to many programmes (PME and the Full School Day).
- *Incentives to teachers:* As explained in the section on teachers, the National System for Assessing School Performance (*Sistema Nacional de Evaluación del Desempeño* – SNED), is essentially based on SIMCE scores and their changes over time, to rank schools and identify the winners of bonus wages that go to teachers.
- *Policy evaluations:* Although never treated as a single indicator, the Ministry of Education uses changes in SIMCE scores as an important element in determining the effectiveness of support programmes. Thus, for example, the P-900, the MECE-Rural and the Full School Day, have received strong support based on external evaluations that found SIMCE scores had risen thanks to these interventions.
- *Policy design:* Based on the weaknesses identified by the SIMCE, the Ministry of Education establishes or redirects actions, such as the National Reading, Writing and Mathematics campaign, begun in 2000, or teachers' upgrading programmes. On some occasions, this leads to setting goals, as occurred for example in the early 1990s when the objective was to achieve 70% in the national level SIMCE.

- *Evaluating curriculum achievement:* The SIMCE acts as a barometer, identifying where students stand compared to expectations established in the curricular framework. The SIMCE makes it possible to identify weak areas, as well as reporting curricular requirements and their implementation.

#### *The media and political players: criticism*

It can be said that the success of the 1990s Reform, in terms of drawing attention to learning as expressed by SIMCE scores, has also become the main source of public criticism.

In the more general framework of greater conflict between government and opposition, starting with the presidential campaign in 1999 and the provision of SIMCE results for that same year, published in mid-2000, the reform has been subjected to constant attacks on its credibility by the media and academic think tanks associated with the opposition. The information provided by SIMCE has been vital to their critiques.

#### *Academic researchers: the debate*

The field of educational research (mainly education economists) makes extensive use of SIMCE information. Initially this was analysed at the aggregate level (municipal areas or schools) but recently it has become possible to work at the student or course level, making estimations much more precise. Faced with evidence that SIMCE scores rise very slightly, expert debate has offered some explanations, including:

- *Excessive expectations:* when trying to improve learning achievements so quickly at the national level; however, the results obtained are “reasonable” in light of international experience.
- *Diagnostic error:* the reform under-estimated the scope and depth or rigidity of existing inequality.
- *Invalid information:* given that during the same period, a major curricular reform and changes in the evaluation system were applied.
- *Insufficient information:* SIMCE provides a partial measure of reform-generated changes, because it does not evaluate all sectors of learning nor the set of skills and abilities stimulated in students.



- *Time:* It is not possible to obtain national level results, if the policies that have been applied the longest all focus on the poorest sectors, while the reform's more universal measures have only recently been implemented.

### *Teachers and schools: teaching*

Teachers have faced limitations in terms of making educational use of the SIMCE, as expected.

First, teachers initially (in the 1980s and early 1990s) considered the SIMCE an exercise in external control and showed some mistrust toward it (the rationale for external application, lack of knowledge about questions, etc.). Second, it must be remembered that SIMCE only covers a fraction of teachers (language, mathematics and occasionally sciences), so initially all the responsibility fell to them and it was not easy for management to turn this into a concern felt by the whole teaching body. Third, SIMCE result reports have not been user-friendly enough for evaluating and improving classroom practice. Only in recent years has more care been taken to ensure that school reports help teachers to improve their teaching, but this effort has run into some significant limitations.

There are no in-depth studies of effective SIMCE use by teachers. According to a recent survey,<sup>33</sup> when asked "How important do you consider the SIMCE in improving learning at school?" Just 14% of teachers said they considered it very important, while 40% saw it as not very or not important at all. According to the SIMCE 2001 survey of school principals, just 28% said their school sets itself goals regarding the SIMCE, in contrast with knowledge-based goals, 80%; repeat rates, 53%; and dropout rates, 50%.

Overall, SIMCE has become an unacknowledged but powerful source of pressure on schools, both due to the incentives and reform programmes, and the incentives from school operators and a small fraction of parents and guardians who use it as a reference when choosing schools. Many schools promote their services in the community using SIMCE results.

### *Families: the market*

According to the parents' survey included in the SIMCE 2001 (second year of high school) just 21% said they knew of previous SIMCE results at their

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33 See *Usos y abusos del SIMCE* (Uses and abuses of SIMCE), Juan Eduardo García-Huidobro, mimeo 2002.

school (while 78% had no idea). The same survey found that knowledge of SIMCE results is strongly associated with the families' socio-economic status. While 12% of low income and 13% of low middle income families said they were familiar with SIMCE results, among high middle and high income families this rose to 46% and 48% respectively. This means that awareness of SIMCE is four times greater in families with more resources than in poor families, but for every group, most parents do not know the SIMCE results for their school.

Given the above, it is not very likely that SIMCE has influenced families' registration decisions. In primary education, where SIMCE has existed the longest, according to the SIMCE fourth grade survey from 1999, just 17% of parents agreed completely with the statement that "SIMCE results influenced their decision to enrol their child in the school," while 30% strongly disagreed with this statement.

### *Understanding results*

The more sophisticated SIMCE methodology becomes, the less understandable it is for teachers. SIMCE's metric robustness must come with greater understanding of its instruments and results, and training and support so that teachers turn the information produced by the evaluation system into a key support for improving their teaching methods. This is perhaps the main challenge of the current stage. The SIMCE tests in 2000, 2001 and 2002 made considerable progress in this direction, but it is time to think about more radical ways than the gradual rise followed so far in this area.

In the case of parents, this issue is equally important: if the information distributed is not understandable, inevitably parents will only remember scores and unfounded rankings and comparisons will continue to rule the educational market and the media. If the goal is for parents to contribute to their children's learning, the SIMCE must be translated into simple understandable messages and practical recommendations to families.

### *Current challenges and questions*

In general terms, the great question is: What is the most efficient way to ensure that a system for measuring quality also serves as a lever for improving the quality of learning? For the Ministry of Education, the most important issue involved in its system for evaluating learning arises from the need for it to move away from being a heavily used policy tool at the system level to becoming heavily used by teachers in evaluating their work with students and reflecting on teaching and learning.

The key question here is how to turn the learning results evaluation system into a lever for teachers' professional development. And how to make the information it produces directly useful to teachers improving their teaching practices. It has been said that neither teachers nor students assume responsibility for learning results and that it is necessary to increase the consequences of these measurements for teachers and/or students. For example, student results should be reported to parents, or should influence their grades or their passing from one grade to the next, or there should be individual incentives for teachers according to their results. Measures like this, however, should consider how the undesired consequences of innovations like this could affect the system as a whole and should evaluate the assumptions or conditions in which these could really contribute to raising the quality of Chilean education.

A second key question at the moment deals with what to measure. *Do learning results indicators give the whole picture when it comes to educational quality?* Or is this just one fragment of the whole? Are learning results an exhaustive or detailed photograph of quality or should other benchmarks be considered? If so, then measures for quality must be complemented by evidence on quality that not only reflects learning results, but also coverage, equity and the conditions involved in learning contexts; teaching practices; learning opportunities.

A third key question is *whether it is appropriate to measure learning results against standards?* A given standard would reveal what is behind the scores; it would clarify the educational differences the grades teachers give in different contexts; it would make it much easier to publish information about what students know and do not know – responding to the problem of ensuring results are understandable.

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*Part Two*  
**EXAMINERS' REPORT**



## *Chapter 1*

### **INTRODUCTION: THE POLICY SETTING**

This chapter describes the policy setting for the review, the purpose and background for the mission and lists the most important issues for policy makers in education in Chile. It also gives a short description of the structure of the review.

#### **The setting for the review**

More than any other country in Latin America during the past decade, Chile has systematically tried to improve educational access and quality. Thanks to sustained economic growth and a commitment to increasing public investment in education, Chile rapidly expanded secondary enrolment in the 1990s, raised teacher salaries sufficiently to begin attracting higher-achieving secondary school graduates into teaching, began building sufficient classrooms to shift to a full school day in basic education, improved conditions in thousands of low income schools, many in rural areas, expanded pre-primary education, and implemented a major curriculum reform in basic and secondary schools. Enrolment in universities also increased rapidly, but mainly at private expense. Public spending on education increased from 2.4% of GDP in 1990 to 4.4% in 2001. These represent major accomplishments, particularly in such a short period of time.

Chile's educational improvement efforts have been conducted in a relatively unique context. In the 1970s and 1980s, the military regime implemented an administrative reform that decentralised formal control of public services, including public education, to more than 300 municipalities. Until 1990, mayors of these municipalities were appointed by the military itself, so the degree of control they had was questionable. But once democracy was restored, mayors were elected. So for the past decade, municipalities have had at least some power to allocate resources and to manage the schools in their jurisdiction. Furthermore, the military implemented a voucher plan in education that gave families the power to choose among privately run, publicly subsidised or municipality – run schools for their children's education. Private voucher schools and municipalities received the same funding from the central government per student average daily attendance, creating an educational

system in which public and private schools compete for students on essentially equal financial footing. Although private school operators complain that municipalities provide “extra” funding to their schools because many municipal school systems run deficits, the differences in per student costs in private subsidised and public schools are not great.<sup>34</sup> Most of the higher municipal costs per student are due to higher teacher salaries in public schools, in turn due largely to their greater seniority.

The restored democratic regime of the 1990s has maintained the private school subsidy system implemented in 1981, despite concerns that it could contribute to greater inequality in student social class composition among schools.<sup>35</sup> There are many reasons for keeping the private subsidy system, not least of which is that by 1990, a high fraction of middle income parents sent their children to private subsidised schools. In addition, trying to restructure school financing in Chile would fracture the fragile balance between left and right that was an implicit part of the accord that restored democratic rule. This balance has been a major factor in the reform accomplishments of the past decade.

Rather than restructure financing, the democratic governments of the 1990s formally recognised the overall inequality in the “market system” inherited from the military and have attempted to correct it through compensatory funding of low income primary schools, isolated rural schools, and more recently, low income secondary schools. At the university level, the government also underwrites student loan programmes based partly on need. Government efforts to move to full day schools, to implement a more coherent national curriculum with free textbooks for all, and to implement a very extensive programme of connecting schools to the Internet (*Enlaces*) are also heavily influenced by equity goals.

The democratic governments since 1990 have used a system of educational evaluation based on national testing to pursue their reform goals. Chile has had educational testing since the 1960s, and the military government put in place the beginnings of a censal (all students in a grade) evaluation system with the Catholic University’s PER test (*Prueba de Evaluación del Rendimiento*) in 1982-1985. The PER test was supposed to provide information to parents about the “quality” of schools so that they could better choose among them. Thus, in

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<sup>34</sup> McEwan and Carnoy (2000).

<sup>35</sup> Comisión Nacional para la Modernización de la Educación, Comité técnico asesor del diálogo nacional sobre la modernización de la educación chilena (1995) ; Gonzalez (2001).

the 1980s, the function of testing was to create better markets for education, to increase competition among schools, and to improve education through competition. There are serious questions whether PER fulfilled those goals, and by the time its successor, the SIMCE test (*Sistema de Medición de la Calidad de la Educación*), came into being in 1988, the goals of the evaluation system were also changing. For example, a main use of SIMCE results from 1988 and 1990 was to identify low-scoring schools to make them eligible for compensatory funding in the P-900 programme (a programme to improve the physical conditions, availability of teaching materials, and in-service training in low-performing schools – funded initially by the Swedish and Danish governments, then by the World Bank). In addition, SIMCE results were released to schools, but not directly to parents, and school test scores were not published. In the mid-1990s, SIMCE also began to be used as a measure of whether the system as a whole was improving or not, and research using SIMCE data increasingly entered into the largely ideological conflict over whether the Chilean educational market system produced better results than a more traditional public school system. Indeed, most of the evidence suggested that the positive effects of competition were elusive, and that despite widely accepted beliefs that private voucher schools were both more effective and more efficient than municipal schools, almost all the studies using SIMCE data suggest that differences are small at best.

More problematic for government policy makers is that average SIMCE scores at both grades 4 and 8 have not increased significantly since 1996, when the tests were made comparable from year to year. Combined with Chile's showing on both the TIMSS 1999 and the PISA Plus tests (2002), which both tested students in grade 8 (the PISA test sampled 15 year-olds, 40% of whom were in grade 8 while 60% were in either grade 9 or 10), and which placed Chilean students as not scoring much differently from students in other large Latin American countries, has left the Ministry open to considerable criticism. The criticism has come mainly from the conservative opposition, who argue that fault lies in not allowing educational markets to function to their full extent.

Despite this criticism, the educational “market system” inherited from the military has continued to influence Chilean educational policy throughout the 1990s more than in any other Latin American country. 47% of pupils attend private subsidised or private paid schools, and this proportion continues to grow (albeit slowly). 70% of the cost of higher education is financed by private contributions from families. Universities have complete autonomy protected by constitutional law. Private primary and secondary schools also have almost complete autonomy, required – if subsidised – only to keep attendance and to implement the curriculum frameworks developed by the Ministry of Education. However, beyond this, subsidised private schools have, since 1993, been

permitted to charge tuition up to USD 80 per month without completely losing their subsidy. The average tuition in subsidised schools is USD 13 per month, which is currently about one third of the value of the monthly voucher amount that government pays schools for each student. Nationwide, these tuition contributions add up to USD 200 million per year – an amount large enough that whatever the concerns about the potential equity effects of making selection and tuition payments available to private schools in a system that is already inequitable, the Ministry is reluctant to give up this additional source of funds. Additionally, private subsidised schools that charge students are obliged to implement a system of scholarships for students who cannot pay: approximately 8.6% of students in private subsidised schools that charge tuition receive this scholarship.

Further, a major incentive scheme was implemented in 1995 to make schools and teachers more conscious of the need to improve educational delivery and to exert more effort. The *Sistema Nacional de Evaluación del Desempeño de los Establecimientos Educacionales Subvencionados* (SNED) was established by law in 1995 as a result of the wage bargaining process between the Teachers' Union and the Ministry of Education (see Chapter 4 for a more complete description). The SNED system establishes “competition” between schools that are roughly comparable in terms of the student population they serve, the communities in which they are located and other external factors that affect student outcomes. SNED establishes homogeneous groups within each of Chile's 13 regions (considering the variables of urban/rural, basic/secondary education and socio-economic family variables). Then, SNED ranks schools within each group according to their scores on the SNED Index and gives awards to schools in rank order, up to the point where the enrolment in the winning schools accounts for 25% of the enrolment in that group. In its last application, SNED 2002-03, homogeneous groups of schools vary from 5 to 11 for the 13 regions totaling 109 for the entire country.

Thus, market thinking has been an important factor in Chilean educational policy making even after 1990. Nevertheless, Chilean education policy in the past decade has focused mainly on changing the capacity of the system to produce more and better education. Secondary education enrolment increased by 18% in 12 years (from 719 819 to 850 713, see Table 7), and the number of graduates also rose substantially. Even if measured educational “quality” has not increased in grades 4 or 8 or 10 (these are the grades in which students are tested), the average level of education of young Chileans has increased substantially. Assuming that a student who graduates from secondary school would score higher on an achievement test in mathematics and language than one who leaves school after only completing grade 8 or 10, average achievement in the young labour force has increased substantially since 1990.

Yet, a succession of governments has also maintained a policy of increasing capacity to produce higher quality education to students in each grade of school. By correcting the abnormally low level of teacher salaries at the end of the 1980s – a result of several years of recession in the mid-1980s and a policy of letting teacher salaries decline through reducing the real value of the subsidy voucher – the democratic governments since 1990 have been able to increase the “quality” of the high school graduate entering teacher education faculties. By developing a new, more demanding curriculum for all grades, the Ministry of Education is providing a higher standard for schools to meet in what they teach pupils. By passing a law that all schools must move from a four to a six hour day by 2006 and by supplying the funds to build additional classrooms to meet this goal, the government has also created the capacity to provide more schooling to each pupil in a given day.

The one area that the Ministry has not been able to touch effectively, however, is the quality of the initial training that student teachers receive in universities and their insertion into classrooms. A major gap appears to exist in this part of capacity building, and this seems to be having a major effect on the implementation of the curricular reform and the overall level of learning in many of Chile’s classrooms. The quality of teacher education is currently one of the Ministry’s principal concerns.

## **The mission**

Chile is a country where educational reform has been at the centre of economic and social policy for more than twenty years, and where there has been an unusual consensus around and consistency of efforts to expand and improve schooling for the past thirteen years. The main purposes of the OECD mission were to respond to Ministry concerns about the effectiveness of these “consensus” policies and to make recommendations for the direction of future policies.

After years of enrolment expansion and an innovative and concerted effort to improve educational quality, as outlined to the team in a series of meetings, Chilean policy makers face a series of important issues:

- Despite efforts to increase test scores in grades 4 and 8, average scores are not rising. What kind of educational interventions or incentives could have significant impact on student learning?
- Teachers are generally resistant to evaluation; classrooms are considered *terra sacra*. There is a school culture in which supervisors (school directors, school supervisors, the technical assistance vice-



principals) are not supposed to observe teachers teaching, and teachers tend to argue that the school system is incompetent, not they. How can this culture be changed? While the review team was in Chile, the Minister signed an accord with the teachers' union that would promote teacher evaluation.

- School directors are not usually instructional leaders, nor do they seem to have the capacity to use the SIMCE results and teaching observations to make systematic improvements in instructional processes and student learning. How should directors be trained?
- The evaluation system – characterised by a national testing programme – has evolved, but has not broadened into classrooms to improve instruction. The quality of reading and mathematics remains low, beginning with the early grades. How can a broader system of evaluation be used to improve learning at the classroom level?
- Although much higher scoring secondary school graduates are being attracted into teacher education programmes, the programmes themselves are only just beginning to change, and there is concern that even with such changes, they still fall far short of the quality of preparation needed to make a difference in Chilean classrooms. The relevance and quality of in-service training is also highly questionable. Secondary education has become almost universal and there have been important efforts and improvements in enrolment since 1990 and a decrease in dropout rates (between 1991 and 2001, the gross enrolment rate increased from 73.5% to 87.7%, the net enrolment rate increased from 54.6% to 62.8% and the dropout rate decreased from 10.3% to 7.5%). Programmes such as *liceo para todos* (high school for all) are attempting to confront the problem of dropouts among poorest students.
- University enrolment is expanding rapidly and will continue to expand to nearly one million students by 2010 – almost 50% of the age cohort. Universities are currently completely autonomous, and their quality varies greatly. Although most students go to the sixteen State, five Catholic, and five “mixed” universities that are financed in part by public funds (direct subsidies and block grants for loans), there exist many private universities. Quality control is a major issue at this level, and so is equity of access and equity of financing, since all universities charge relatively high tuition, and many students must borrow money at subsidised rates in order to attend.

The review team began its consultation on these issues in a series of briefings with Ministry officials, including the current Minister and Vice-Minister, as well as four former Ministers, in charge of various aspects of the reform. The review team also met with the teachers' union – *Colegio de Profesores* – with educational researchers from a wide spectrum of perspectives, and with the major associations of private schools.

The review team then turned to fieldwork – visiting a number of different kinds of primary and secondary schools, both private and public. The team visited four secondary and four primary schools in Santiago. One group from the review team travelled to the north of the country, visiting regional offices of education and municipal governments, and another group went south. The two groups visited a total of 13 primary and secondary schools in various municipalities. While in the South, review team members also observed a class at a teacher education programme at the regional university (Universidad de la Frontera) and met with students in the programme at that university and another, at the Universidad de Concepción. In addition, review team members visited two of the nation's largest education faculties in Santiago (Pontificia Universidad Católica de Chile and Universidad Metropolitana de Ciencias de la Educación).

During the visits to schools and university teacher training programmes, the review team was able to interact with school directors, teachers, and students, as well as to observe classes being taught, and to observe in great detail students' work in various grades. The team's interviews and interchanges were unusually frank and open.

As a result of these intensive interviews and observations in the field, the review team was able to learn an enormous amount about what makes the Chilean education system work and not work. The teams saw examples of excellent education in difficult conditions and education that could have been much more demanding and interesting for students that had been selected because of their high level academic abilities. Policy makers in the Ministry of Education, the review team found, had a remarkably accurate assessment of their strengths and weaknesses. Even so, the review team found that they tended to overestimate the degree to which their reforms were being implemented in classrooms. There is an underestimation of the time, resources, and qualitative teacher education required to make operational curricular aspirations in schoolrooms throughout the country.

## **The organisation of the report**

The rest of the report analyses these issues as viewed by the review team and makes recommendations to the Ministry in each area of concern. The analysis is divided into seven sections:

- The role of teachers, teacher education, and teacher professional development.
- The system of student evaluation.
- Incentives and efficiency of the educational system.
- Secondary education, with special emphasis on vocational education.
- Higher education.
- Equality of opportunity in the education system.
- Conclusions and recommendations.

## *Chapter 2*

### **THE TEACHING CAREER AND TEACHER EDUCATION**

This chapter focuses on teacher education and teaching careers, including background and changes in policy in contemporary Chilean society; it describes the profile of the teaching force and the challenge of the reform agenda and evaluation of teachers. It deals with initial teacher education, the continuing professional training for teachers and educational research.

#### **Background**

To understand the situation of the teaching career in contemporary Chilean society it is essential to view it against the historical background that prevailed under the military regime prior to 1990, and within the emerging educational policy context under the three democratic governments since that time.

Changes introduced by the military regime from 1973 to 1990 had devastating effects on the morale and working conditions of teachers. The changes transformed the structure and financing of the education system. The role of the State in education was greatly reduced. Public expenditure on education was reduced from the 7.2% of GDP, which prevailed in 1972, to 2.4% of GDP in 1990. Public schools were transferred from the control of the State to municipalities, which had flawed democratic credentials. The regime used legal instruments and incentives to promote State-funded private schools. Teachers' status as State employees was eliminated. Teacher salaries were reduced by about one-third and working conditions of teachers deteriorated significantly. Evaluation systems were introduced that were designed to showcase the underperformance of public schools.

Teacher educators came under suspicion and changes in teacher education policy led to a diminution of its dynamic and an emasculation of its research role. The political climate forced many in the university community, including those in schools of education, to leave the country or academia. One of the tasks of university rectors, appointed by the military regime, was to "cleanse" the universities of political opponents, particularly in the social sciences and

education faculties.<sup>36</sup> The impact of this policy is graphically caught in the statement to the review team of a dean of a school of education who has played a leading role in recent years in the reform of initial teacher education. He stated:

*When I returned to this school after 18 years in Europe, it was hard to believe how much this school and the university had changed. The best faculty (staff) were no longer here, and I would have to work with those that were left, many of whom had been hired during the dictatorship. As I had left an attractive professional position at a research university I quickly realised the daunting challenge of trying to improve what was left here.*

In essence, the effect of many changes introduced by the military regime was to strip the teaching force in Latin America's oldest public education system of all the basic attributes of a profession. The pervasive effects of these changes implemented in an authoritarian climate of fear would be felt for generations to come. Before handing over the reins of power to a democratic government in March 1990, the outgoing regime succeeded in passing constitutional legislation that has continued to have significant influence on subsequent policy developments. It is not insignificant that Chile is the only country in the Americas where the Armed Forces are represented on bodies that approve changes in the curriculum of instruction in basic education and approve universities and professions. The scars left by the lack of trust in teachers, and the undermining of the teaching profession as experienced in Chile during the seventies and the eighties, do not become obliterated automatically on the changeover of a regime. Prolonged experiences, memories, and habit affect the human psyche and are not easily discarded. It should be borne in mind that the vast majority of the teachers in active service in Chilean schools today worked within the system shaped by the authoritarian regime. The formative influence of that experience is not always easily or comprehensively cast aside.

### **The changing policy context**

Thus, when the new democratic regime assumed power in March 1990, it faced the serious problem of a largely demoralised teaching force, to some extent shaped and influenced by the role designated for it by the military regime. The form and quality of teacher education available were also flawed and out-of-date. If an educational reform agenda was to be achieved, it was vital

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<sup>36</sup> Nuñez (2002), p. 33.

that a building process be undertaken to ensure that these essential elements were addressed and significantly improved over time.

The new government began its operations within a delicate and sensitive political context. Future political stability was by no means certain and many crosscurrents of political viewpoint were in evidence. The government adopted a prudent, pragmatic and gradual process of change. It did not set out to re-structure the inherited school system. It concentrated instead on promoting two central canons of policy – quality and equity in education – within the existing framework of schooling. Thus, the tripartite system of schooling was preserved – public schools, run by the municipalities; private subsidised schools; and private non-subsidised schools. Neither did the government re-constitute teachers as civil servants although it did create a special status for municipal teachers as public servants in decentralised services.

A striking feature of educational policy in Chile over the last thirteen years is the continuity and consistency of policy that has prevailed over three governments and six ministers for education. Even though, at first, reform measures tended to be low key, from the start it was recognised that education was central to a strategy to consolidate democratic governance and to promote and support economic and social development. From the outset, the Ministry worked with external assistance and in 1994, a high-powered technical committee presented a draft blueprint for moving education forward. This fed into the National Commission on the Modernisation of Education in 1995. By skilful political action, a strong consensus was nurtured, even among the political opposition, to support the emerging strategic policy on education. With steady economic growth in the mid-nineties at over 6% per annum, resources were available for investment in education.

The democratic coalition governments, in power since 1990, introduced a series of reforms aimed at developing a democratic culture in education, and at replacing a culture of fear with one of professionalism and collegiality. Most government strategies were consistent with this purpose. Chief among them was the choice to implement all key components of the reform with existing staff in the Ministry, including the supervisors. The architects of the education reform behaved as if they believed that fundamentally all those working in education, regardless of the roles they had played during the recent authoritarian past, were professionals, and that they would respond to opportunities that treated them as such.

Over the last decade Chilean education policies have aimed at attracting, educating and supporting teachers capable of teaching all students at high levels. The guiding principle of teacher related policies has been that of

strengthening teaching as a profession. In this critical assumption lie the strengths of the reforms of the recent past, as well as the opportunities for further improvement. It is apparent that while much has been gained by treating teachers as professionals, it begins to be clear to Ministry authorities that teachers need to be supported in very specific ways in order to develop the competencies to teach all students effectively.

The Chilean government has followed a multi-pronged strategy to professionalise teaching: improving the incentives to attract candidates to the teaching profession, supporting reforms in initial teacher education, and supporting practicing teachers with greater instructional resources and with workshops for professional development. (These and associated reform measures are reviewed in later sections of this chapter). In addition to this new respect accorded to the education profession by Ministry authorities, two central and related pillars of a framework to attract better candidates to the teaching profession were a new public discourse on the strategic importance of education to the country's future, and a new teaching statute that significantly increased teacher salaries.

The democratic coalition that was elected in 1990 appointed as Minister of Education a highly visible figure, now President of the country. With a core team of reform architects, that exhibited unusual continuity in office during more than a decade, Minister Lagos placed education at the centre of the agenda of the democratic government and, together with the reform team and his successors in office, developed a narrative about education that, for the first time in Chile, recognised it as strategic to the country's future and as a matter calling for sustained and considerable State efforts to support improvement. As a result, there has been considerable consensus in Chile over the last 13 years, and this consensus has allowed fundamental continuity in education strategy, allowing reforms to mature and deepen and allowing the architects of these reforms to learn from experience. In reviewing the daily press in Chile one gets the distinct impression that education is a matter of public interest. Even among groups that differ ideologically and in political views, there is a core of education issues on which there is consensus, and education is clearly an issue of public debate. In this climate, educators cannot but feel that they work in a profession that matters to the future.

In addition to this new discourse about education as a matter of State policy central to the country's future, a second strategy to attract more candidates to the teaching profession was a gradual and significant increase in teacher salaries, part of an instrument to make the rules governing selection and promotion into the teaching profession more transparent: the *Estatuto Docente*. These salary increases, negotiated with the teachers' union, served also to

negotiate supportive relations between the Ministry and the Union through most of the decade. Teacher salaries increased on average 141% between 1991 and 2001, more than salary increases in the economy and in the public sector.<sup>37</sup>

### **Profile of the teaching force**

Significantly, one of the first initiatives of the democratic government in 1990 was to begin the preparation of an Act, known as The Teachers Act, which was approved in 1991. The Act aimed, on the one hand, to repair the deterioration that the teaching force had experienced in earlier years, while, at the same time, favouring processes of professional improvement which would prepare and facilitate efforts to improve the quality and equity of public education. It legally recognised the “professional” character of teaching, a strong amount of stability was guaranteed in public sector education, and greater stability was provided in private subsidised schools than that enjoyed in the general labour market.

The Teachers’ Act set out national regulations for conditions of work, a common wage structure, bonuses for extra qualifications and for performance in difficult conditions. Signalling what was to be a new and on-going pattern, discussions and negotiations took place between the Ministry and the main Teachers’ Association, which in practice operates as a teachers’ union. Decisions became centralised regarding the pay and contracts of teachers in public schools, with some spill-over effects for teachers in private schools.

A steady trend to improvement in teacher salaries was put in place. The influential technical report of 1994, “The Challenges to Chilean Education in the 21st Century,” recommended increasing public and private expenditure on education in order, among other reasons, “to attract into the teaching profession the required number of talented young people.” The Teachers’ Act was amended in 1995 in terms that brought more flexibility into arrangements. Among its new provisions were that, in the future, principal teachers would be appointed for five years, in open competition, after which there had to be a new open selection process. The Act also specified that in the appointments to technical pedagogical positions in schools preference must be given to applicants with accredited qualifications and experience in administration and evaluation. The minimum wage of teachers who work a 44 hour week, defined since 1995, increased by 53.8% between 1995 and 2001, and the average salary has increased by 38.9% during the same period (Table 1). Various other initiatives since 1996 have aimed at “strengthening the teaching profession,”

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<sup>37</sup>

*Ibid.*, p.38.



dealt with later in this chapter. Thus, it can be concluded that the government has engaged in a sustained re-building process with reference to the teaching profession, although the conditions of work of many teachers continue to be more demanding than those in most OECD countries.<sup>38</sup>

**Table 1. Average monthly teacher salary for 44 hour week and minimum salary by type of school, by year (in CLP year 2000)**

Year	Average Salary and Legal Minimum Salary at Entry		
	Average Teacher Salary	Minimum Municipal	Minimum Private Subsidised
1990	252 539	138 880	71 429
1991	265 348	165 663	153 980
1992	309 954	183 390	176 516
1993	348 711	194 157	180 244
1994	396 630	225 362	201 563
1995	436 453	248 681	243 526
1996	468 698	273 374	272 193
1997	512 124	300 193	298 647
1998	538 605	327 167	326 928
1999	565 609	349 238	349 238
2000	594 158	372 057	372 057
2001	631 010	391 750	391 750

Source: Mizala and Romaguera (2001), Table 13.

It is difficult to give a cohesive and comprehensive account of teachers' conditions of work in Chile. This is largely due to the segmented character of the school system involving differences in conditions and entitlements for varying categories of teachers, and to the lack of a comprehensive database on teachers, which is also affected by the fragmented structure of the system. Even in the public school sector, significant differences in the level of resources and support from the 341 municipalities impact on the conditions of work of teachers in these schools. Nevertheless, a review of the teaching career needs to highlight main issues and trends so that the challenges facing teachers may be better understood, their responses to the challenges better appreciated, and recommendations for improvement be better grounded.

The overall teaching force in 2001 was 146 918, of whom 125 615 were classroom teachers, with the others in the capacity of principals, technical-pedagogical roles etc., amounting to about 15% of the overall total.<sup>39</sup> Over

<sup>38</sup> OECD (2000), *Education at a Glance*.

<sup>39</sup> Attracting, Developing and Retaining Effective Teachers, Country Background Report for Chile (2003) [CBR2], Table 2.5, p. 83.

80 000 of the teachers are members of the Teachers' Association. There has been a steady increase in the number of teachers, rising from 134 885 in 1998 to 146 918 by 2001. This was linked to the need for additional teachers to support the full school day policy, inaugurated in 1997, and also to general increases in pupil participation. In the aggregate, female teachers comprise about 70% of the teaching force, but the imbalance is much more apparent in pre-school and elementary school than in secondary school (grades 9-12).

While teachers still resent the loss of their status as State employees, in public municipal schools they enjoy stable tenure of employment, unless they lose their positions through chronic inefficiency. Municipal teachers also obtain their positions through open, public competition. Teachers who work in the private subsidised sector are governed by private individual contracts, regulated by the rules of the Labour Code, with some safeguards. The selection procedures for teachers in the private sector are not subject to any regulations save those contained in the Labour Code. Fixed-term contracts apply here, and such teachers do not enjoy the security of tenure as in the public sector. Of the total teaching force 55% are now employed in municipal schools, about the same percentage as student enrolment.

In Chile 90% of teachers have a university degree, with 10%, or about 12 000, "authorised" to teach on the basis of lesser qualifications or experience, and in special employment circumstances. The age pattern of the teaching force is both interesting and revealing. While 35% are under 40 years of age, 65% are over 40 years, with 17% of those over 55 years of age.<sup>40</sup> Thus, the vast majority of teachers were accustomed to the practices that prevailed during the military regime. It is also noteworthy that the oldest teachers are found in the public schools where about 66% of them are over 45 years of age (Table 2). This is not unconnected with the greater freedom of the private schools to terminate employment particularly of older teachers with higher salary concerns, but, perhaps, with reduced energy levels. This trend can exacerbate difficulties in the municipal schools where socio-economic and pedagogical problems are frequently greater. Indeed, when engaged in a general appraisal of teacher conditions of work one needs to be conscious of the different school environments in which teachers operate and the consequent varying demands placed upon them. The Teachers' Association is highly critical of a trend which is demarcating and favouring the private school sector to the detriment of public schooling and to national policy on equity.

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<sup>40</sup>

CBR2, p. 84.

Table 2. **Chile: teachers, by age and type of school, 2000 (%)**

Age	Type of School			
	Total	Municipal	Private Subsidised	Private Paid
18-24	3.4	1.2	6.1	2.8
25-34	25.2	13.0	36.1	29.3
35-54	62.9	74.4	51.7	60.8
55+	8.5	11.4	6.1	7.2
Total	100.0	100.0	100.0	100.0

Source: Mizala and Romaguera (2001), Table 3.

The contractual hours for teachers, in the context of the full school day policy, is a maximum of 44 hours per week, which is higher than the OECD average. At present, 32% of teachers are engaged for 44 or more hours per week. A further 54% are involved between 30 and 44 hours, while the remaining 15% are regarded as part-time teachers engaged for less than 30 hours.<sup>41</sup> While the 44 hours is a demanding requirement, it should be borne in mind that in the context of the partial school day teachers could be engaged for 60 hours (30x2) per week. Indeed, the review team was informed that to supplement their salaries, teachers engage in extra work outside their formal commitment, although a 2001 study conducted by Universidad Católica indicated that only 7.6% of teachers actually do so. While formerly it was normal for teachers to work in more than one school, official figures now indicate that this is down to 13% of teachers. Of the 44 hours contractual time, it is specified that 75% of it should be in class contact, or 33 hours actual class teaching. By the standards of most OECD countries this is a heavy teaching load to which must be added class preparation, correction of pupils' work and various aspects of reportage and liaison with parents and others. The review team was also informed that many teachers had to incur long journeys to and from school, particularly in the Santiago region, which was a further drain on energy. In this context, the review team also noted that teachers were expected to undertake in-service education during their vacation, a practice which teachers in most countries are loathe to do. Furthermore, apart from Ministry up-dating courses, teachers are generally liable to pay for in-service courses at higher education institutions.

The national average figures for pupil teacher ratio, calibrated on number of pupils divided by overall teacher numbers work out as follows: 23 pupils per teacher in municipal schools, 31 in private subsidised schools and 15 per

<sup>41</sup> Evaluating Chile's Education Policies 1990-2003, Chile's Country Background Report [CBR1], p. 47.

teacher in private schools.<sup>42</sup> However, national averages mask great variations between urban and rural, and remote rural schools. Class sizes in urban areas tend to be very large, with the recommended maximum set at 45 pupils per class, but classes can be bigger. The review team observed many classes of this size, and many in the high thirties. Such large classes pose serious challenges to teachers if they are to employ a repertoire of pedagogical methods that include small group work and individual learning sequences, as well as whole class teaching. This becomes particularly acute if the teaching is taking place in schools serving communities of great socio-economic and cultural deprivation. It also increases the work associated with the correction and feedback on individual pupils' work.

The heavy workload and the demanding circumstances that teachers encounter, particularly in some public schools, would seem to be a factor in the high incidence of medical certificates that teachers submit. An epidemiology study has been instituted under the auspices of the Ministry and the Teachers' Associations to analyse the illnesses most prevalent among teachers. The first findings of the study are that 45% of the teachers interviewed used medical certificates during the year, mostly on low-risk illnesses. In addition, it was concluded that 35% of the teachers expressed having symptoms that suggest a high risk of suffering mental health problems (anxiety, depression, sleeping problems) compared to 13.8% of a control group with similar characteristics.<sup>43</sup> The Ministry of Education is to be commended for sponsoring such a study, as it is important for planning on top relevant issues affecting the well being of a profession on which so much depends, and which is internationally recognised as a stressful profession.

In public schools, teachers get salary increases incrementally based on years of service. However, it takes 30 years to reach the maximum, which is longer than in most countries. The basic salary is augmented by a series of incentive allowances based on extra qualifications, higher performance levels and the exercise of responsibility. There are no rules with regard to incremental salary increases for teachers in the private sector. Whereas about 66% of teachers in the public sector are over 45 years of age, only 29% of teachers in private subsidised schools and 31% in private schools are over that age. There is no compulsory retirement age in Chile. Although women may retire at 60 years of age, and men at 65, the pension available leads to a huge drop in income, and this acts as a disincentive to retiring. Many teachers cannot afford to retire when pensions are only one-third of salary, and no lump sum is paid. Over the past

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<sup>42</sup> *Ibid*, p. 28.

<sup>43</sup> CBR2, p. 60.

few years, special severance payments have been offered as an incentive to retire once teachers have reached the necessary age. In the context of the age balance of the teaching force, of the many new professional challenges that face teachers today, and, of increased numbers entering reformed initial teacher education programmes, it would seem desirable to extend this incentive scheme, or consider measures to improve pension provision.

An unusual feature of school administration in Chile is a trend that has developed regarding the posts of principal and a senior role known as “technical-pedagogic.” Prior to 1990 principals in public schools were appointed directly by the military government. New principals are now appointed by the municipality in public schools and by the trustees in private schools. Since 1995 new principals are appointed for five-year terms, following which they have to compete again in open competition for their jobs should they wish to retain them. There may be merit in a fixed term contract for principals, but the review team saw no rationale for the period being only five years. Bearing in mind the key leadership role of a principal in modern education, on the importance and difficulty of building a collegial, teamwork approach within the school community, of establishing a school plan linked to development and raising standards, it would seem that a five year span is an unnecessarily short time, particularly if the principal appointed is new to the school. The review team understands that discussions are currently on-going in Congress to modify aspects of the appointment and role of principals, which provides an opportunity to reflect on this and associated matters. The review team considers that the role of the principal in the appointment of teachers, in current circumstances, should be more clearly emphasised and provided for. The team would also agree with those who propose that in future appointments to the post of principal, specific qualifications and experience in educational leadership and management should be mandatory. Selection should be based on an interview and curriculum vitae and documentation that assess the applicant’s ideas for school planning and development.

The review team also suggests that consideration be given to changing the role of the principal. The team was impressed by the entrepreneurial flair of some of the principals in schools the team visited. But it appeared that instructional leadership, if it exists at all in the school, is mainly the responsibility of the “technical-pedagogic” personnel (the UTP, *Unidad Técnico Pedagógica*). The review team thinks that this results in less supervision and instructional leadership than would be the case were the principal’s role to be clearly defined as responsible for improving instruction in the school. It is a great advantage to the school to have the benefit of the expertise of specialised staff in curriculum and pedagogy, operating in roles equivalent to deputy or assistant principals, applying their skills in designated areas of school life.

Essentially, they should perform roles supportive of the work of principal as instructional leader. It may be a better model if the principal devolved some of the administrative tasks to the support staff and gave greater concentration to the academic planning and pedagogic life of the school, including far greater direct supervision of classroom instruction.

Evidence from attitude surveys of teachers dating from 1996 and 1998, indicate that teachers were appreciative of the government's efforts to improve their status and conditions and their satisfaction with their career choice. For instance, a survey of a sample of teachers in the greater Santiago area in 1996 recorded that 86% disagreed with the statement that "sometimes I feel that I have no vocation for this profession," while 79% agreed that "if I could choose a profession again, I would choose teaching." A survey of a national sample of teachers in 1998 found that 69.9% of teachers declared that they carried out their work "motivated by their professional vocation," and 83% recognised that "if they had to choose a new profession it would be as a teacher."<sup>44</sup> A later study, in 2001, recorded teacher confidence in school management reaching levels of over 80% in the different types of schools.<sup>45</sup> Such perspectives could lead one to believe that teacher morale is high. However, contemporary oral evidence and the review team's discussions with various involved parties suggest that this matter is more complex. (This issue is discussed further in the next section).

## **Teacher evaluation**

The review team found that there was a long-standing and widely shared desire in Chile for the evaluation of the work of individual teachers at regular intervals. The Teacher's Act of 1991 incorporated provision for such evaluations in elementary and middle schools recognised by the State. The scheme devised allowed employers to dismiss teachers who were negatively evaluated two years in a row. The Teachers' Association successfully opposed its implementation because it tended to be punitive rather than formative, because of the Association's apprehensions regarding the attitudes of principals, and because, the majority of the proposed evaluating team had been appointed by the military regime. In recent years, a voluntary evaluation scheme came into operation, to which several thousand teachers submit themselves each year. However, teacher evaluation continued to be a topic of public and political concern, and it resurfaced as a major issue of national debate in 2001. The Minister of Education took the initiative and established a tripartite technical

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<sup>44</sup> *Ibid.*, p. 35.

<sup>45</sup> *Ibid.*, p. 19.

committee of the Ministry, the Municipalities and the Teachers' Association. After several months this committee reached agreement on a model for teacher evaluation. Following a pilot project in 2002, an agreement was signed by the Ministry, the municipalities and the president of the teachers' union on 25 June 2003.

The evaluation test is only mandatory for teachers in the public (municipal) school sector. It is more formative in character than the earlier model, and it is oriented to professional development. Assessment is located at school level and involves a portfolio, a self-assessment guideline, a personal structured interview, references from the principal and the technical-pedagogic official, as well as peer assessment from other teachers in the municipality, involving videos of classroom performance. There are four categories of performance – distinguished, competent, basic and unsatisfactory. Those categorised as unsatisfactory can obtain two other evaluations, with tutorial work available. If unsatisfactory on the third evaluation, the teacher is subject to dismissal. The evaluation process is being implemented on a phased basis, beginning in 2003. It is expected that each teacher will be evaluated once every four years.

The Review team appreciated the high priority given in Chile to the improvement of teachers' performance. A recent (2003) agreement between the Ministry of Education, municipalities and *Colegio de Profesores*, defined the formative character of a complex scheme of teacher evaluation. The scheme, to be applied in municipal schools only, will cost approximately USD 50 per teacher per annum, totalling USD 3.5 million per year. Additional municipal resources of up to USD 8 million per year are contemplated for remedial action and continuous professional development activities that the evaluation system may recommend. The Review team considers that there are less costly and cumbersome alternatives than this, based on reports by school directors and supervisors, but it understands that the chosen one is justified on political feasibility and formative purposes criteria. However, as the new system matures, it would be worthwhile exploring alternatives which would allow the cost of evaluation to diminish in favour of increasing investments in professional development actions.

As in most other systems, the proportion of teachers who are culpably ineffective in Chile is not likely to be large. Principals, deputy principals and the "technical pedagogic" personnel are well positioned in each school to identify such under-performing teachers. With the support of the Ministry, such personnel should be able to take appropriate remedial action, in the first instance, to help the teacher to improve, and in the event of protracted failure to do so, to institute dismissal proceedings. The supervisor could also be called upon to assist in such cases. In the context of limited resources for teachers'

continuing professional development and limited staff with qualifications and experience of teacher evaluation, such a targeted approach would be likely to yield better dividends than the current plan. Most countries do not engage in the top-heavy approach of evaluating every teacher in the public schools once every few years throughout their careers, and this does not lead to low standards in their teaching forces.

### **Challenges of the reform agenda**

Guided by the two principles of promoting quality and equity in the education system, since 1990 governments have initiated a range of educational reforms that are working their way through the system. The key agency for the implementation of these reforms and the realisation of their objectives is the teaching force. Having spent the early years preparing the way, the Ministry introduced major curriculum reform measures beginning in the middle of the decade. In 1996 a new curriculum for elementary schools was introduced, followed by a reformed curriculum for secondary schools in 1998 and a new curriculum for pre-school education in 2000. Little consultation with teachers occurred in the design of the primary school curriculum, but such consultation was seen subsequently as desirable. Also in the year 2000, in the light of experience, a re-drafting occurred of aspects of the primary curriculum focusing on the first four grades with more precise guidelines on reading, writing and mathematical skills. An important change was made in the structure of secondary schools whereby a comprehensive curriculum prevails in years 9 and 10, with a division in the subsequent two years into humanistic-scientific studies and technical-vocational studies. The content of the technical-vocational sector has been greatly modernised (see Chapter 5).

Detailed programmes of study on contents, learning objectives, teaching approaches and evaluation methods accompany the curricula. Schools are free to formulate their own study programmes within the national framework of objectives and contents, or implement those defined by the Ministry of Education. As is to be expected, the great majority of schools (at present, 86%), implement the Ministry's programmes. There is also provision for cross-curricular themes related to values and skills. In modernising its school curricula, Chile has been informed by international experience and expertise. The curricular policy has sought a shift from "knowing-that" to "knowing-how," a move to higher standards, encouragement of understanding rather than rote learning, and a fostering of pupil judgement and decision-making. Specifically, the policy seeks to promote the following competencies: capacity for abstraction; systemic thought; experimenting and learning to learn; communication and teamwork; problem solving; managing uncertainty and adapting to change. While the Ministry adopted a gradual approach to curricular



implementation, it can be concluded that curricular policy measures involve a profound change in curricular ideology, content, methodology and evaluation. In any society, such a reform presents a daunting challenge to teachers and to teacher educators and the process of implementation takes time, resources, expertise and experience to be fully realised. The review team was impressed with the emphasis and quality of the curricular policy being adopted and it commends the “rolling” reform approach being taken in Chile. However, it urges patience regarding expectations of its full actualisation.

An integrated part of the curricular reform movement is the incorporation of information and communication technologies across the curriculum. Specifically, the secondary curriculum of 1998 states:

*The underlying aim of educational efforts in Information Technology is to provide all students with the tools to successfully navigate the “digital world” and to perform effectively within it. To achieve this, students must have the opportunity to work directly with computers, so that they will learn how to operate as autonomous users and gain hands-on experience of computers’ applications and possibilities. In a complementary manner, they will study, research and discuss the nature, scope, impact and social implications of the digital world.*

As early as 1992, the Minister of Education established *Enlaces* as an agency to promote ICT in education, first on a pilot project basis. Following the early success *Enlaces*, in 1995, became the official, nation-wide agency for the introduction of ICT to the Chilean education system. Its success has been most impressive. By 2003, 8 300 schools were in *Enlaces*, 92% of pupils have ICT in their schools, 78% of pupils have Internet in their schools and 76% of teachers have been trained in the use of ICT. A very desirable initiative regarding the work of *Enlaces* was the establishment of a strategic alliance between the Ministry of Education and 24 universities across the country, spearheaded by the Universidad de La Frontera. The Technical Assistance Network that emerged from this alliance has provided training for teachers and technical support for the ICT provided. The review team formed the view that further efforts should be made to invigorate and develop this partnership. It was not surprising to the review team to learn that the impressive work of *Enlaces* has been favourably evaluated by three external studies. As with other countries, one of the key on-going challenges is the greater integration of ICT into curriculum practices. While the review team saw plenty of evidence of the provision of ICT equipment and its use, it was not often seen as a pedagogic tool. This incorporation of ICT into their teaching is another major new challenge to the teaching force. The team would encourage *Enlaces* in its future work to build up more practical guidelines for teachers, provide materials for

concrete situations, and disseminate exemplars of good practice in the use of ICT in teaching and learning.

Another major development initiated in 1997 was the law for the “Full School Day”. This was a policy move to break the tradition of schools operating with two shifts of pupils during the mornings and afternoons so that pupils could benefit from a full day at school. This policy had major implications for resources, infrastructure, planning, teacher numbers, and so on. Of course, the working out of such a policy takes time, but by 2003, 66% of pupils in State subsidised schools benefited from the full school day. To facilitate other schools to comply, the deadline for compliance has been extended to 2006. While the full school day policy required adjustments for teachers, in most cases it had the advantage for them of being able to work a full schedule in one school for up to 44 contracted hours whereas, previously, many teachers had to work in more than one school for up to 60 contracted hours per week.

Whereas the *Sistema de Medición de la Calidad de la Educación* (National System for the Evaluation of Educational Quality – SIMCE) has been in operation since 1988, it became more developed in recent years as an evaluation agency for pupils in a cluster of subjects in grades 4, 8 and 10. It is an external measurement test of a term response type in which almost all pupils in these grades are evaluated. The results for individual schools (not individual pupils) are published and provide valuable data and statistics for policy at both individual school and national level. Since 1995 bonus wages for teachers are attached to SIMCE results. Since 1998 the SIMCE tests have been aligned with the new curricular programmes and thus serve as a reinforcement for the implementation of these programmes. The results attract an increasing amount of attention in the media. The review team found that school leaders, teachers and supervisors are now engaging more in collective dialogue on the outcomes of individual SIMCE tests, and setting targets for improvement. The review team recommends that this feature become an institutionalised matter for school communities and act as a stimulus for qualitative development. A national committee has recently been established for the development and use of SIMCE, and SIMCE itself is strengthening its data analysis, all of which is progressive. Thus, the SIMCE tests are assuming a more central place in the life of school and this in turn calls for new responses from the teaching force, and provides a further degree of accountability (Chapter 3 delves more deeply into the review team’s observations regarding evaluation).

Through a variety of mechanisms national policy has also been promoting the greater involvement of parents in the education system and emphasising the partnership aspects through the planned establishment of advisory School Councils, with parental representation. This too calls for skills from teachers in

the appropriate communications and inter-personal relationships with parents. In schools visited by the review team, it was noted that positive relationships and attitudes existed towards parents, and parents (or if missing, grandparents) were supportive of the schools' efforts on behalf of their children. In this context, it is gratifying to note a finding from a recent public opinion poll, which indicated parents' positive perceptions of the work carried out by teachers with 86% emphasising their responsibility and punctuality, 82% their good relationships with pupils and parents and 81% their interest in further training, learning and development.<sup>46</sup>

## **Teachers and the reform agenda**

This brief overview of some of the recent key policy changes in Chilean education indicates that the Ministry has undertaken a series of major reforms that pose many significant challenges for the teaching force. The question arises as to the capacity and capability of such a teaching force, most trained and accustomed to a different system, to carry forward the reform agenda. Despite the stretching of the teaching force implied by the range of changes, it was noteworthy for the review team to be authoritatively informed by a variety of sources, including the Teachers' Association, that there was no articulated opposition to the changes by teachers. While teachers retain reservations about the continuance of structural features of the system inherited, as the Country Background Report states, "they (teachers) enthusiastically support teaching and curricular changes".<sup>47</sup> This is a valuable asset to the system, and should not be underestimated.

Regarding the practical implementation of the curriculum, the Ministry of Education supplied the review team with the outcome of a survey of a nationally representative sample of teachers on the level of implementation of six subject areas of the new curricula. It is significant that, since the year 2000, well over two-thirds of the teachers recorded that, in their view, the curriculum in these subjects was covered totally or up to 75% of the total in all six subjects.<sup>48</sup> Other sections of the report focus in more detail on educational standards and qualitative outcomes.

The team visited a variety of school types – urban-rural; municipal and private subsidised; schools in advantaged circumstances and schools serving very socio-economically disadvantaged communities. This underlined the fact

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<sup>46</sup> *Ibid.*, p. 18.

<sup>47</sup> CBR1, p. 56.

<sup>48</sup> Ministry of Education/UCE (2003a), pp. 6-7.

that the work circumstances of teachers can vary greatly due to the context in which they find themselves.

The review team was impressed by the quality of relations between teachers and the general positive atmosphere that prevailed in schools. Teachers seemed to adopt an integrative, as opposed to a formal, distanced style of teaching. In a number of schools serving disadvantaged areas the team was particularly impressed by the supportive and caring attitudes exhibited by teachers and by their concern to promote pupils' self-esteem. Teachers were generous with their time on extra-curricular activities, which they rightly viewed as a significant part of holistic education. Teachers also were at pains to liaise with parents and guardians. Several schools visited benefited from staff initiative in enlisting sponsorship of sports or other facilities from businesses in the local area. The review team also found evidence of co-operative work by teachers on various projects. Even though large classes make it difficult, the team noted a good deal of group work in operation. In a few instances the computers were being used as a teaching tool. The team also saw many instances where drama and narrative techniques were being drawn upon, with pupils actively engaged in the practices. The work with kindergarten classes was impressive and teachers are to be commended for their efforts in providing stimulating learning materials in these classrooms.

Overall, the team found a strong sense of vocational commitment by teachers, except in some instances where there was an imbalance of older teachers who had been transferred into municipal schools, some of which already faced daunting challenges. The review team shares the general conclusion of the World Bank Audit Report of 2000, discussed in the Country Background Report, when it concluded that there was "more student activity than in the past, more closeness in their relationships with teachers, and more variety and richness in the use of learning resources, but the whole lacks a focus on achieving learning objectives".<sup>49</sup> A range of recent evaluations have led to a conclusion that the system was in a transitional phase, and the review team agrees. Likewise, the review team considers that bearing all circumstances in mind, this is what is to be expected. This, however, represents significant progress and provides a platform from which more targeted progress can be made on the basis of increased confidence, more experience, and focused support.

A process of development is underway – a working out of an ambitious reform agenda. Confidence, based on competence, is a significant ingredient in

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<sup>49</sup> CBR1, p. 36-37.

the success of such a process. There is some evidence based on the outcomes of a TIMSS study, dating admittedly from 1999, that problems of teacher confidence existed, at least at that time. It recorded that in mathematics, 45% of Chilean teachers felt little confidence in their teaching skills, whereas the general average of other countries was 14%. The percentage that considered they were confident in the mastery of this subject was also very low at 24%, whereas it was 63% internationally. Similarly, Chilean teachers recorded very low levels of confidence regarding teaching skills and subject mastery in science in relation to the international averages.<sup>50</sup>

These data should be taken seriously. From the observations of the review team in classrooms and discussions with teachers, Chilean teachers appear to be seriously under-prepared to teach an adequate curriculum. The TIMSS survey refers to grade 8 teachers, but there is evidence that lack of sufficient preparedness is widespread throughout all grades. If teachers are not confident, it is because they understand how poorly they are trained to meet the higher standards of the new curriculum. Although improvements may have taken place in recent years, the review team found that teachers still lack specific training and competence in many aspects of the teaching of literacy and mathematics. More focused and targeted attention is required in pre-service and professional development to equip teachers in the pedagogy required by the new curricula.

Spokespeople of opposition groups, employers, some teacher representatives and others have been critical of the degree of educational progress being made. Evidence was heard of teachers being “depressed” with their predicament, the unrealistic expectations being held and the lack of understanding and affirmation of aspects of their work. The poor performance by Chilean pupils in international studies of the IEA, TIMSS and PISA seems to have nurtured a crisis of confidence that things are not as they should be. The query was raised to the review team:

*Why, following 13 years of greater investment in education, major reforms in curricula, improved funding of schools, is Chile not achieving results comparable to the higher scoring OECD countries?*

It seems to the review team that this is a time for steady nerves, and while not being in any sense complacent, the Ministry should keep to the policy track it has been following. The achievement of major educational reform is a complex process in all countries, and when it is achieved it is not in a short time-span. In the context of the situation inherited by the government in 1990, a

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<sup>50</sup> *Ibid.*, p. 55.

great deal of re-building, expanded investment, new policy formulation, new approaches to teacher education, the development of infrastructure, the provision of pedagogic materials and so on, were necessary. As was noted earlier, the sustained, coherent and consistent manner in which these elements were achieved is of historic importance in Chilean society. The seeds for reform were well sown; it is important to allow time for germination so that a good harvest may be reaped. This is an important phase in the reform programme; it is important that it not be truncated by over-reaction on the basis of international test results, and inadequate understanding of the complex nature of the implementation and achievement of major educational reform. This reform will be central to the strategic positioning of Chilean society within the knowledge society in the years ahead. Confidence and trust between the key agencies are crucial for future success. The clarification, articulation and affirmation of goals that have been reached can act as a spur for creating an on-going momentum to further propel specific targets in the underlying quality and equity targets of the system. In guiding the way forward, the Ministry would be well advised to continue its policy of relative partnership with the teaching profession. It would be a worthy cause of celebration for the bicentenary of independence in 2010, if the aims of the educational reform agenda can be largely achieved, and be seen to be moving forward.

### **Support for teachers and pupils**

Educational reform and development is a costly business, and Chile, assisted by buoyant economic growth in the 1990s, has invested significantly in education. Public spending on education as a percentage of GDP increased from 2.4% in 1990 to 4.4% in 2001. Direct private expenditure on education (mainly on university education) is high in Chile and adds a further 3.3% of GDP. Public expenditure on education as a percentage of total public expenditure increased from 11.9% in 1990 to 18.7% in 2001.<sup>51</sup> Key areas to benefit were teacher salaries, social assistance schemes to support the poorest children in education, and incentive schemes and in-service supports for teachers in the system. These formed an integral part of the reform process.

Among the effective measures taken were basic ones. These included the provision of free meals to low-income children. Thus, by 2003, 50% of children in kindergarten and 40% in primary schools received free breakfasts and lunches, and 31% in secondary schools received free breakfasts *or* lunches. Another basic requisite is textbooks and the Ministry now supplies free textbooks to pupils for mathematics, Spanish, science, history and English. At

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<sup>51</sup> CBR1, p. 15-16, CBR2, pp. 7-9.

the beginning of 2003, over twelve and a half million textbooks were distributed. The review team was impressed with the quality and presentation of some of the textbooks, but was surprised to learn from researchers that some teachers rarely use them. If this is so, the reasons should be investigated. Reference books for libraries in schools have also been made available, even though the stock was limited in most schools visited. As was indicated earlier, 8 300 schools have been supplied with ICT equipment, involving facilities for 92% of the pupils.

A sequence of programmes was undertaken by the Ministry in the 1990s to support different categories of schools so as to improve educational quality and equity. These were: the Primary Education MECE programme (1992-97) affecting 8 000 primary schools; Secondary Education MECE programme (1995-2000) involving 1 350 schools; the P-900 programme for primary schools (1990-2001) for 1 200 schools; the Rural Education Programme (1992-2000) with 3 285 small rural schools; the *Montegrande* Programme (1997-2000), affecting 51 secondary schools and the High School For All programme involving 432 secondary schools in disadvantaged areas. These various programmes all focus to one degree or another on supporting teachers, many of whom teach in low income schools.

A range of salary bonuses has been introduced to encourage teachers to be proactive and to reward them for effort to improve student outcomes. These include rewards for upgrading their qualifications, incentives for teachers to work in locations considered difficult for geographic or social reasons, and bonuses for responsibility positions. A scheme entitled the National System of Performance Evaluation of Schools – SNED (*Sistema Nacional de Evaluación del Desempeño de los Establecimientos Educativos Subvencionados*) rewards the collective performance of teachers.

One of the most promising efforts to provide incentives for teachers is a recent initiative to develop a teacher career ladder. Individual teachers can present themselves for certification as a “master teacher,” increasing their status and salary. They undergo a content knowledge test, present a portfolio of classroom work, and present a video of their classroom teaching. These are judged by a panel. Of the 1 900 teachers who completed their application for this certification programme, 312 were certified. Such skilled teachers can also opt to act as mentors to their peers and so benefit from a further allowance. The review team is of the opinion that this programme should be promoted. It achieves two important goals: to create a career ladder for teachers based on a meaningful evaluation of teacher competence; and to identify teachers who have the legitimacy to assist other teachers improve their teaching. Were there a

sufficient number of these Master Teachers, they could also become the mentors of newly graduated teachers just beginning their careers.

Initiatives in support of in-service teacher education have also been undertaken by the State – these are discussed in a later section of this chapter. Such schemes obviously give teachers a sense that there are opportunities to improve and that they can be rewarded monetarily for action they take in this direction. However, there is insufficient evidence available to demonstrate that the salary incentive schemes have an impact on student learning, or even that they produce better instruction.

### **Initial teacher education**

A significant strategic challenge for those leading the reform movement in Chilean education was to get procedures in place to change radically the initial, or pre-service, education of future teachers so as to have it aligned with the reforms for schooling, and to re-train the existing teaching force so that it might be capable of coping with the reform agenda. It is symptomatic of the political sensitivities of the early reform years that the government did not feel it prudent to designate the changes as a “reform” until the year 1995. The Ministry of Education led the educational reform. Initial teacher education, however, was the responsibility of universities autonomous from the Ministry. The education facilities in the universities had been weakened and were not in the vanguard of change, but rather resistant to it. The challenge was to devise a mechanism that could activate moves towards a congruence of perspectives and lay the foundations for a form of initial teacher education in alignment with modern pedagogic needs and conditions.

Teacher education is one of the priority areas of concern for the Ministry. The team visited university faculties of education, held discussions with student teachers, met with a group of deans of Faculties of Education, held discussions with agencies involved in in-service teacher education, and discussed teacher education issues with the Teachers’ Association, groups of principals, supervisors, Ministry officials and others. Overall, the team formed the view that some creditable work had been done in relation to both initial and in-service teacher education but that teacher education and in-service training needed much more attention in order to support the education reform. Without success in these areas the momentum and sustainability of the reforms are very likely not to succeed.

As the reform movement developed in the middle 1990s, an appraisal of contemporary initial teacher education gave rise to great concern about its quality and suitability. Among the defects noted were the following. There was



a lack of high quality applicants motivated towards the teaching profession. The teacher education curriculum was poorly articulated, overcrowded and fragmentary. Teaching strategies were outdated. The infrastructure, teaching resources and equipment were inadequate for the demands of modern teaching. Students spent most of their time at theoretical lectures, with little time for independent learning or library usage. Little attention was paid to practical training and experience in the classroom, and the limited practice was confined to the end of the course.<sup>52</sup>

Thus, a major problem had to be confronted. In an address in 1996, President Frei announced that the challenge would be taken up. The Ministry of Education devised a scheme “Strengthening the Programmes of Initial Teacher Education” (FFID) which became operative in 1997 for a 5 year period. The strategy adopted was to provide a sum of USD 25 million as a competitive stimulus for university faculties of education to submit applications setting out plans to reform their initial teacher education programmes. The Ministry produced guidelines for the type of changes envisaged.

The project encouraged processes of self-evaluation, as universities competing for improvement funds had to present a diagnosis of their shortcomings and a plan for improvement. The project also supported communication and interaction among those leading change in the different universities and sponsored discussion in a few seminars on teacher education to which international specialists were invited to discuss the experience in other contexts. The bases of the bid focussed on changes in the structure, contents and educators. Out of 32 institutions that participated in the bid, 22 were pre-selected and provided with feedback to reformulate their plans. 17 out of these 22 were finally selected for support. Those universities cover 78% of all student teachers, and include 14 traditional universities – included in the *Consejo de Rectores* (Council of Rectors) – and 3 private universities.<sup>53</sup>

An analysis of this project by the project co-ordinator credits it with an increase in the demand for teaching careers among high school graduates, increases in the college entrance exam scores of applicants to schools of education, an increase in the number of students who applied for the scholarship to be teachers (this scholarship funded 1 184 student teachers between 1998 and

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<sup>52</sup> CBR2, p. 41.

<sup>53</sup> Avalos (2003), pp. 53-54.

2002). Each of the 17 universities involved designed a new curriculum for teacher education, with greater emphasis on practice.<sup>54</sup>

Variations occur in course design, for instance, and some give more emphasis to problem solving approaches than others, but there is a general commonality in the reformed course frameworks. The review team considers that this holds much promise for the future. As is to be expected, these changes were not achieved easily and the review team was informed of internal academic battles within the universities as the process evolved. Among the more important changes brought about by the project were greatly improved infrastructure, particularly regarding ICT equipment. School-based experience and teaching practice are now planned over the four-year period of the concurrent course and throughout the one year of the consecutive course. Co-operating teachers or mentors in the practising schools guide student teachers and liaise with the university supervisors. Periodic training seminars are held between the co-operating teachers and the university staff. More attention is paid to general didactics and the pedagogy of individual subjects. Students are familiarised with the applications of ICT to education, and some courses are available on the website. Subjects such as Educational Psychology and Sociology reflect a more applied dimension, while Curriculum Studies and Evaluation are now incorporated in the courses. Students are also required to conduct some projects on their teaching experience of an action-research character. As well as seeking to provide more skilled practitioners suited to the contemporary needs of schools, at least in one Faculty of Education it was emphasised to the team that it was hoped that student teachers would also develop a critical and reflective stance on their professional work.

When the team met a group of deans of education faculties, it was clear that they were enthusiastic at the changes being brought about and were keen that they would continue and develop. Besides the worthwhile outcomes emerging from the Ministry's initiative of 1997, the review team considers that the linkages and form of partnership which the process has involved between the Ministry and the faculties of education are very important, in a variety of ways. It would be desirable to build on these and so improve communication, trust and mutual understanding. The review team recommends that the Ministry continues to lend its support to education faculties which seek to proceed on the reform path.

That said, these interviews in faculties of education and observations at the schools suggested that the reform does not adequately address the problem of

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<sup>54</sup>

*Ibid.*, pp. 76-111.

subject content knowledge for all teachers, but especially those who will end up teaching in the upper grades of primary school, and the problem of new teachers' pedagogical skills. They also suggested that the implementation of the changes in the faculties of education still did not adequately address key deficiencies in Chilean education, such as teaching literacy in the early grades, and developing writing skills.

In general, Chilean primary school teachers end up teaching with the mathematics and language content knowledge they acquired by the end of secondary education. Since Chilean grade 8 students score at very low levels in mathematics and reading comprehension on international tests, this suggests that Chilean teachers enter teaching with levels of subject knowledge that are very low compared to teachers in developed countries and many developing countries. Unless initial teacher education systematically corrects this deficiency, Chile will not emerge from this "vicious circle" for many years to come.

The problem in upper primary school is partly structural, since grades 7 and 8 of Chilean schools used to be part of secondary education, and now are part of primary school. The review team considers that primary teacher education currently does not provide sufficient content courses in mathematics, language, and other subjects as part of the teacher education curriculum even for lower grade teachers, but the lack of these courses poses an acute problem when primary school teaching graduates end up teaching in the upper primary grades. The Ministry must address this issue if it hopes to improve student outcomes over the next generation. Teacher training institutions need to be required to teach more subject content courses to primary school teachers and to link these courses to the new reform curriculum. Since teachers teaching lower income students should be especially well prepared in subject content in order to help these students "catch up" to more advantaged students, preparing primary school teachers more rigorously is also an equity issue.

While the extra resources and stimulus provided by the Ministry's initiative have produced promising outcomes, it should be borne in mind that little more than one or two cohorts of student teachers have graduated from the new course frameworks. Accordingly, these graduates' impact on the schooling situation is, as yet, necessarily very limited. What is important is the commitment for the long haul. As in most aspects of education, one invests not so much for immediate outcomes, but for the long term. It should also be borne in mind that impressive objectives, course outlines, new emphases in course structures do not always convert quickly into high level actual performance. In this context, the review team was concerned at the very high average age level, 55 years-old, of the staff in university education departments. At present, there is no

mandatory retirement age for such staff. Even with goodwill, it is not easy for such staff to act as exemplars of dynamic, energetic and integrated teaching styles. However, teacher education staff did benefit from short-term study visits to teacher education institutions in North America, Europe and Latin America, which opened up broader perspectives. The review team notes, that there has also been a welcome increase in the number of education department staff holding Master's and Doctoral degrees. The review team also learned that some staff in the academic disciplines who contribute to aspects of the teacher education courses often have little awareness of, or sympathy with progressive methods of teaching the subjects to a greatly expanded and very heterogeneous pupil clientele in the schools. It is important to increase efforts to ensure closer interaction between staff in special subject departments and staff in the education departments. Another concern is that the co-operating teachers in the schools get no recognition in terms of remuneration or reduced hours for their assistance to student teachers, and usually attend seminars with university staff in their own time, although some universities provide incentives for them. The professional commitment and generosity of co-operating teachers is admirable, but it may be difficult to sustain this goodwill for a prolonged period, without more formal recompense.

While this project to reform initial teacher education has improved infrastructure and created opportunities to reform the teacher education curriculum, the embedding of such changes as an integral part of the life of institutions is slow, as is recognised by those leading change. One dean of a faculty of education explained:

*You have to understand that deans are elected here. We have to work with the very staff who are the product of a long period of neglect in our schools. The changes we propose have to be done with them and accepted by them. Otherwise these changes will not last long and we will be removed in the next election. This is going to be a slow process.*

The teaching of student teachers observed in one university took place in small groups, using power point presentations, with teachers seemingly accustomed to using technology for seminar instruction. In spite of these features, instruction was still quite teacher centred, with the teacher engaging the students mostly to answer questions with short answers. Students appeared to be looking for ways to provide the answer predetermined by the teacher rather than engage in a critical discussion of their reactions to the readings or to the issues under discussion. The content of the discussion observed was highly theoretical, a review of some basic concepts of the sociology of education. There were no examples or references to concrete schools and students in Chile

in discussing these concepts, students did not relate this discussion to the practices and observations in schools where they performed as part of their course.

In a conversation with students in that university, the students pointed out that their education provided very limited opportunities to practice and to develop appropriate pedagogies. They talked about the separation between their education faculty and the disciplinary departments where they learned content. One student preparing to teach language summed up the problem as follows:

*Here I have learned to teach, and I have learned a lot about Spanish (language) but I have not learned how to teach Spanish.*

The problems resulting from the lack of integration of various departments within schools of education are compounded by the marginalisation of faculties of education from other departments in the university. An extreme manifestation of this syndrome, not unique to Chile, was the fact that a think tank established as a research and development unit of the Information and Communications Technology project (*Enlaces*) was initially housed within the faculty of education at the university. During the years when it was there, there was virtually no interaction between the staff in this institute and the faculty of education. The think tank eventually moved to its own facilities across from the campus of the education faculty. The interaction did not increase. Student teachers complained that their programme of study did not provide opportunities for them to visit this place or learn about what was going on in this institute, which they thought, based on hearsay, was pretty exciting!

The review team also found evidence of a disconnection between teacher education and the school system in so far as some students had a very imperfect knowledge of the character and extent of the education reform programme. Furthermore, when deans of several faculties of education were asked whether students, in the course of their subject didactics studies, benefited from study or analysis of the school textbooks for this subject they reacted defensively, as if this was not a matter of importance. Conversation with students in another university confirmed the basic ideas outlined earlier, providing also glimpses that things have begun to change. Students in language classes explained that in the previous year of their course they had to write research papers which were based on observations in the schools where they practiced. The dean of this school of education explained that his vision was to gradually infuse the education of student teachers with research, getting members of his faculty to do more research and to collaborate with students in this process.

The review team found these students to be articulate, feisty, critical and capable of many insights into ways to improve the profession and the quality of education in the classroom. More importantly, they seemed capable of reflecting on the gaps and weaknesses in their own professional training. In other words, they have developed a critical, reflective stance with a strong sense of vocational commitment that should stand them well in their future careers.

It appears that a better image of the teaching career, reflecting improved salaries, and of teacher education is taking hold, and is now attracting larger numbers of students of higher ability. Thus, the number of students studying to become teachers has increased from 19 995 in 1997 to 27 817 by 2001, an increase of almost 40%.<sup>55</sup> In 2002, for the first time, teaching was the university programme with the most applications, displacing engineering. Competition for entry has become very keen, particularly for primary education. In one university education department visited there were 660 applicants for the 120 places available in 2002. It is also highly significant that since 1998 there has been a sustained increase in the scores obtained by entrants in the admission tests for higher education, as is reflected in Table 3:

**Table 3. Chile: increase in the score obtained by applicants to teacher education faculties in the university admission test, 1998-2001**

Year	Type of Teacher Education			
	Pre-School	Elementary	Secondary	Special
1998	535	540	533	554
1999	506	552	543	566
2000	559	571	555	571
2001	570	587	580	592
Increase	6%	8%	10%	6%

*Source:* CBR2 (2003), Table 3.2, p. 84.

One major initiative, in this context, was the introduction of a scholarship scheme in 1998 to promote the entrance into the teaching profession of students of outstanding performance, who wish to study education (involving those with over 600 points in the Higher Education Admission Tests, high grades in the secondary school, with teaching experience, or graduates from other disciplines). The scholarship finances the student teachers' complete career, and may also include educational materials. The interest in these scholarships has

<sup>55</sup> CBR1, p. 54.

increased from 633 applicants in 1998, 122 who received scholarships, to 3 942 applicants in 2002, 291 to whom were awarded scholarships.<sup>56</sup>

This increased interest in teacher education courses and the higher calibre of candidates emphasises, all the more, the need for quality courses. The value of the Ministry's initiative, "Strengthening the Programmes of Initial Teacher Education" has been discussed earlier. However, it only directly reached 17 of the universities offering teacher education courses, albeit 78% of the student cohort. It should be remembered that currently there are 61 institutions that offer teacher education as a major in 342 different programmes. These operate largely on their own terms. Only 65 education courses have been submitted to the voluntary accreditation process. Because of the importance of the quality of education programmes for future teachers working in the schools, the Ministry should urge the formal accreditation of all initial teacher education programmes, whose graduates it recognises as having the *basic* requirements to teach.

A further weakness in quality assurance has been the lack of a rigorous process of examination, both theoretical and practical, leading to certification by the teacher education institution. It should be incumbent on the institution to put in place such rigorous assessment open to external monitoring by the Ministry or a newly created board of certification. New performance standards have been developed through partnership between teacher educators, the Teachers' Association and the Ministry, which should form an integral part of the certifying process.<sup>57</sup> Such procedures, coupled with high quality candidates and competition for places, should signal better standards for the future.

The certification system needs to address directly the two main weaknesses of Chile's current teacher education system. First, teacher content knowledge of the subjects taught, particularly in terms of the new reform curriculum. New teachers would have great difficulty teaching the new curriculum effectively if they do not have the level of mathematics and language knowledge required to deliver competently the new curriculum, or, in the higher grades, to deliver more specialised mathematics, science, language, and social studies courses. The review team observed many competent teachers in its visits to the schools, but it also observed teaching that indicated insufficient mathematics and language knowledge to deliver high skill levels effectively to their students. This was especially true for the upper level of primary school (grades 5 to 8), but the team also observed these difficulties at lower and higher school levels. This applies just as much to the inadequacies the team observed in teaching

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<sup>56</sup> CBR2, p. 38.

<sup>57</sup> Avalos (2001), p. 13.

reading and writing to first graders as it does to poor teaching of mathematics in secondary schools. The TIMSS data cited above, showing Chilean teachers' lack of confidence in their ability to teach the required curriculum in math, should be taken seriously. As stated earlier, this lack of confidence reflects real deficiencies in preparation to teach, including subject content knowledge and practice with the new curriculum. *Chile will not be able to deliver high quality education with inadequately trained teachers.* With that in mind, the certification system for new teachers should definitely include an examination of subject content and pedagogical knowledge, with rigorous standards for passing.

Second, graduates of teacher education programmes appear to have, in many instances, inadequate supervision in their teaching practice experience. Although in theory, student teaching is supposed to be monitored both by a supervisor from the university and the supervising teacher in the school, a number of students interviewed by the review team indicated that such monitoring and resulting feedback was not adequate. Certifying monitoring is more complex than testing new teacher's content knowledge, but needs to be done, both by establishing standards and by providing incentives to schools and teachers that supervise student teachers according to those standards. The advice, guidance and evaluation involved in teaching practice supervision are of major importance to the formation of trainee teachers, and they merit sustained care and attention.

Chile has been active in the areas of initial and in-service teacher education. Yet, as in many other countries, facilities for the induction of beginning teachers are very weak. There is no formal induction policy, despite the fact that much research indicates the long-term effects of the early formative experiences of the new teacher. While instances occur, no doubt, of senior staff providing some guidance and assistance to teachers beginning their careers, when it does occur it is due to good will rather than any requirement. It is probably not practicable to institute a formal induction system in the immediate years ahead, but it should be possible to give some recognition to the problems faced by beginning teachers. The review team suggests that it might be specified as part of the role of the technical-pedagogic person to orient new teachers to the life of the school and to provide some assistance to them. It should also be considered that a reduction in the contracted hours should be given to teachers in their first year of teaching.

In this changing environment of over-supply of candidates for teacher education the review team considers that a tighter watch be kept on the number of "authorised" teachers. These are teachers who have not gone through formal teacher training courses, but who may have varied forms of cognate experience



and have qualified from secondary school. Such appointments are intended as a temporary arrangement when cases are made by employers that qualified teachers are not available. In the first instance, permission is given for a one-year contract, but this is renewable. The provision of “authorised” teachers can be a flexible expedient, but 10% of the teaching force seems too high a quotient if more stringent regulations were applied for recognition.

The review team met a number of recent teacher graduates of special education courses (frequently referred to in Chile as teachers of differential education). If these were representative of the general body of such teachers, then Chile is fortunate to have teachers of such high motivation, personal qualities, and, as far as could be judged, fine professional competence. However, it seemed to the review team that the proportion of such personnel to the needs of schools was very inadequate. There were some large schools serving areas of great socio-economic deprivation where the team could only admire the apparent equanimity of a single special education teacher faced with daunting pupil problems. All teachers’ education should incorporate an element of remedial education, to help children with learning difficulties. However, it might also be worthwhile to encourage and support some experienced classroom teachers to attain further qualifications in remedial and compensatory education, who would act as a support to the special education teachers and to others on the staff team.

The review team could not obtain any statistics relating to the participation of student teachers of ethnic origin within teacher education. As understood, there are about one million people of indigenous origin in Chile. It would be important through the support of scholarships or other incentives to encourage bright students from this sector of the population to aspire to careers in teaching. Even if it calls for affirmative action, efforts should be made to increase the number of such teachers. In addition, the teacher education programmes and textbook materials should respect the cultural distinctiveness of such students.

Another form of initial teacher education exists in Chile which the team found came under heavy criticism from many of its interlocutors. This is usually referred to as “distance teacher education.” These courses have been provided by some universities over the last few years for people who are already in the labour force doing other kinds of work, but who wish to obtain a teacher-training qualification. They often attend lectures on Saturdays or in vacation time, and may have access to distance education materials. At a time when efforts are being taken to strengthen, up-date and make initial teacher education programmes more rigorous, there is a danger that the expansion of the “distance” programmes may undermine or act as a counter-current to these

efforts. There may be advantages in the provision of courses, at least in in-service teacher education, through distance education, particularly to teachers in remote areas, but they would need to be well planned, organised, delivered, and be accredited. The evidence available to the review team indicated that there were major problems regarding the quality assurance aspects of the current distance courses available for initial teacher education. It would be a retrograde step if such courses expanded, and the Ministry should exercise great caution in the recognition of graduates from such courses as teachers for schools in the future, particularly in an environment in which there is no official certification of new teachers. If there were a well-run mandatory certification programme that included an examination of subject matter knowledge and of teaching skills as linked to the new curriculum, this could act as a regulatory mechanism to ensure the quality of distance teacher education degrees.

### **Continuing professional development for teachers**

While initial teacher education is important, its reform takes a long time to yield a substantial number of newly trained graduates to the overall teaching force. A government agenda of large-scale reform cannot wait for such an outcome and has had to take action on a number of fronts, more or less simultaneously, to help equip the existing teaching force for the tasks ahead. At first, it would seem that the Ministry over-estimated the capacities of the teaching force to undertake such change. In conjunction with the major reform agenda as it gathered momentum from 1996, the Ministry became pro-active in the area of teacher in-service education, or, as it is increasingly termed, teachers' continuing professional development (CPD). The Ministry has engaged in a range of CPD initiatives to inform, energise, and help train teachers for the implementation of the reforms. The institutions of higher education have developed many post-graduate courses with specialisations relating to new goals required of teachers. The Centre for Training, Experimentation and Pedagogic Research (*Centro de Perfeccionamiento, Experimentación e Investigaciones Pedagógicas*, CPEIP) has been re-structured and more focussed on the needs of teachers in contemporary circumstances.

CPD formed part of the series of "focussed" programmes directed at certain categories of schools. These involved the P-900 programme for primary schools (1990-2000), the Rural Education programme (1992-2000), the *Montegrando* project (1997-2000), and the High School for All project (2000-2006). These schemes formed a particular part of general policy aimed at uplifting the resources of the school system. Teaching in schools has been supported by a general improvement in the physical infrastructure of schools and by the provision of adequate furniture and desks for students. The review team was satisfied with the general physical conditions of schools. According to

informed observers this is one of the clearest areas of success of the recent policies. By improving the learning environments and providing learning materials to students, Chilean policies have successfully addressed a series of first order challenges. It is the success of these first order challenges that allows the Chileans to move on to a set of second order challenges concerned with the quality of the time spent by students in schools. Interestingly, the early CPD work on these projects was located within the school or in school clusters, and involved teachers forming peer communities, which, with the support of the Ministry in the form of documentation and supervisory staff, reflected on design and implemented and evaluated actions involving change. The scheme of rural micro-centres involving the periodic coming together of teachers in small rural schools seems to have operated particularly effectively. This collective professional style of work has continued to be at the core of Ministry sponsored CPD projects. In the context of the P-900 and Rural Schools projects, the CPD focussed on basic subjects of instruction, language and mathematics, but it appears that the content of the training was on general pedagogical principles and orientations, rather than on developing specific pedagogical practices to teach subject matter. In these and the other projects the work undertaken was close to the realities of the teaching context, and the exchange of ideas and good practices by teachers in the working groups gave them a sense of personal engagement and mutual solidarity.

As the new curricula came on stream they presented a massive challenge to the training and upgrading of teachers implementing them. It involved major logistical and personnel issues. These programmes catered to about 40 000 teachers per year, as Table 4 shows:

**Table 4. Teachers participating in curricular reform upgrading course, 1999-2002**

Type of Course	1999	2000	2001	2002
Primary	22 143	27 050	26 615	23 530
Secondary	11 174	13 107	15 672	9 770
Management	5 504	6 634	5 674	–
Total	38 821	46 791	47 961	33 300

Source: Ministry of Education, CPEIP, 2003.

This represents a remarkable achievement. The courses took place over 70 hours during summer vacation and other times during winter vacation. The courses were free, but teachers undertook them on their own time. While very helpful in information giving and up-dating, the courses were not courses in curriculum development *per se* and their impact may have been more on the information side than on the understanding and skills dimension. Teacher participants are eligible for training allowances in relation to their engagement

with some CPD courses. Also, collective meetings are now taking place among pre-school teachers working on the contents, processes and materials for implementing the new pre-school curriculum.

Building on the Community of Teachers idea, Community Teacher Training Workshops, were designed, based on groups of elementary school teachers from particular learning sub-sectors under the leadership of a teacher picked by the community. This teacher is prepared by the CPEIP and equipped with appropriate materials. During 2001 and 2002 there have been about 300 such workshops involving 7 500 teachers.

Another major nationwide CPD initiative was that conducted by *Enlaces* in promoting the use of ICT in education. These courses were organised for groups of 20 teachers per school, over a two-year period. The workshops were carried out through 24 universities. Teachers had to be trained in the use of the basic information platforms, and in the use of specific educational software. The availability of this technology offers a distinct resource to teachers in small rural schools, and is a source of support to refresh subject matter knowledge for teachers. There are also materials in the basic software package offered with this technology that support traditional instruction. In larger urban schools, the computer labs generally have a dedicated technology teacher. So far, 76% of the teaching force has benefited from the ICT training, under the auspices of *Enlaces*. It would be desirable that the website maintained by *Enlaces* ([www.educarchile.cl](http://www.educarchile.cl)) should expand the section that encourages teachers to exchange lesson plans and innovative ideas.

Reflective of Chile's concern to keep alert to international trends in education is its CPD scheme of Fellowships Abroad (*Programa de Becas en el Exterior para Profesores*). Each year the Ministry holds a competition for teachers who wish to go abroad for career development and short study trips. The aim is that this experience will strengthen their professional competence and encourage innovative practices. Teachers have over the years gone to institutions in the United States, across Europe, Israel, New Zealand, Canada and Latin America. Table 5 indicates the pattern of this scheme since 1996:

Table 5. **Grants for Teachers to Study Abroad, 1996-2002**

	1996	1997	1998	1999	2000	2001	2002	Total
Teachers Receiving Grants	588	796	902	936	916	462	460	5,060

Source: Ministry of Education – CPEIP, 2003.

Thus over 5 000 teachers have benefited from this scheme. On returning to Chile, they write reports on their experiences and are available to inform colleagues of their reflections and intentions. There are admirable aspects to this scheme. It broadens the perspective of teachers who travel abroad. They bring back ideas that infuse the education system with new energy. They help teachers relate their work to the educational work in other countries. But this is an expensive mode of CPD. The cost of the scheme per annum is USD 5.4 million, representing an amount that is more than the cost of the initiative to reform teacher education in the 17 universities. It is also equivalent to over 70% of the annual cost of CPD upgrading courses for teachers.<sup>58</sup> In the context of priorities for CPD the review team suggests careful consideration of the relative added value to school improvement of this grants programme. The review team recognises that a well designed experience of international education can be very beneficial for teachers, teacher educators, and specialists in curriculum and assessment practices. The team was not in a position to evaluate the outcomes of the grants scheme that currently exists for teachers. It suggests that such an evaluation be undertaken to ensure that the outcomes justify the high proportion of the CPD budget currently allocated to the programme. Ultimately, the Ministry should be able to show that there are significant externalities associated with the programme – effects beyond the benefits to the individuals who participate in the travel abroad should begin to show up in the schools if the programme is to be justifiable over the long term.

This outline of Ministry sponsored CPD reflects a very commendable level of activity, has involved large numbers of the teaching force and has included elements recommended by OECD's publications on good practice in CPD. Participants evaluate courses and their views feed into future practice. The Teachers' Association has been consulted on courses and its support has been valuable. As in most countries, it is not easy to evaluate the impact of teacher CPD on student learning. Avalos records:

*The evaluations of these programmes, in general, show positive effects on teachers as individuals, as social beings, and in their professional work in the classroom and schools.*<sup>59</sup>

In the administration of education in Chile there is a cohort of staff, known as "supervisors." At present there are 999 supervisors. In the early nineties, their role was largely bureaucratic relating to issues of control, inspections, school maintenance, and fiscal issues. The supervisors were not agents in the

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<sup>58</sup> CBR1, Table 6, p. 24-25.

<sup>59</sup> Avalos (2001), p. 8.

educational reform process, and in many instances may have been out of sympathy with it. As the years progressed, their role has been changing. They are now expected to provide support to school management, curriculum implementation, and be involved in student discipline issues. Traditionally the supervisors did not work inside the classrooms, but this is beginning to change. Particularly in the Santiago region over the last two years, a more proactive policy is in evidence. A scheme has categorised schools into four types and the supervisors are working closely with the poorest schools experiencing serious difficulties and with the schools with “focalised” Ministerial improvement programmes. Supervisors also liaise with schools on the outcomes of the SIMCE results, seeking to get these integrated into the life of the schools. The review team understands that recently the Ministry has introduced “A New Deal” law that would encourage older supervisors to take early retirement. It seems that some staff may be unsuitable and unmotivated for current tasks. Some supervisors the team met, on the other hand, were very focussed, highly motivated and had a well informed diagnosis of the role they could play in support of the reforms and in-service teacher education.

Potentially, supervisors acting as agents between the municipal administration and the schools, could be of great value. However, at present, the role is too multi-faceted and lacks coherence. One analyst reported to us that his research indicated that “The supervising system has collapsed.”<sup>60</sup> The review team considers that efforts should be undertaken to clarify and re-define the role of supervisors, with a stronger emphasis on the educational advisory, rather than administrative/clerkship role. If this were undertaken, and those who did not fit the new role were redeployed or retired, the team suggests there should be an up-grading of the profile of the job, improvements in training, and an expansion in numbers. The supervisory service, as a re-energised agency, with a clear sense of purpose and with the experience and training to strengthen their credibility with the teaching force, could be of great value in support of quality improvement. There are signs that this approach could be taken up. An indication of this is the recent training of supervisors in the revised L.E.M. Reading, Writing and Mathematics programme – for grades 1 to 4. Reliance is being placed on a “cascade model” to support the Ministry’s desire “to bring the reforms into the very heart of the classroom.”

Other general changes supportive of the professional development of teachers have been an education journal distributed by the Ministry of Education and another distributed by the teachers’ union. These are attractive publications where issues of practice are treated in an intelligent and accessible

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<sup>60</sup> Raczynski (2003), p. 4.

manner. A very impressive tool to support the professional development of teachers is the website of the Ministry of Education, arguably the best of its kind in the developing world. On this website there is information for teachers, research reports, and general guidelines to develop lesson plans in a wide range of subjects. The review team saw students using worksheets their teachers had downloaded from this website.

The various CPD programmes sponsored by the Ministry and the CPEIP are largely focussed on short adaptive-type programmes to orient and equip teachers to the managerial, curricular, pedagogical, and assessment changes being sought. These are a necessary, but not sufficient, CPD provision in building a system that will have a sustained capability for qualitative change. This CPD work needs to be supplemented by more long-term, in-depth CPD engagement, leading to improved qualifications for participants and to supply skilled personnel both to act as innovators and for peer support. Chile has to look to its higher education institutions and to external expertise to provide this. In the early years, the universities were not well equipped to provide what was needed, but there is evidence that this is changing. While the review team came across a variety of views on the quality of CPD provided by the universities, nevertheless, it was struck by some favourable features. One of these was the high regard felt by some school staffs, working in very difficult circumstances, for the assistance being given to them by university personnel on the ground as part of Ministerial sponsored interventions. Other teachers who had recently obtained post-graduate CPD qualifications considered that these were of good quality and worthwhile.

It would be unrealistic to expect that the many universities offering CPD courses are all in a position to offer high quality training, well attuned to modern, progressive educational thought and practice. The inherited neglect of educational disciplines within the universities takes time and effort to redress. However, discussions by the team with deans of educational faculties gave cause for hope that improvements were occurring, including staff development initiatives. If accreditation processes can be further extended, it would assist in distinguishing for the public the good from the not so good. Even without this, when teachers have to pay for their own courses at university, they will usually exercise prudent discretion as to where they expend their money.

At one university faculty the team was impressed with the way they were modernising their post-graduate CPD offerings. A series of post-graduate diplomas were available in areas such as the applications of ICT to education, thought development and cognitive development, and educational leadership. At the Master's level, students were working in areas such as curriculum development, evaluation, learning difficulties, school management and

administration, and ICT and initial education. About 12 students were enrolled in Ph.D. courses. The team was not in a position to evaluate the teaching or research involved, or to discuss its quality with students, but it seemed that the work was on the right track. The stimulus given through the FFID (*Fortalecimiento de la Formación Inicial Docente*) project for initial teacher education seems to have had beneficial spin-off effects on the CPD postgraduate courses. It may take more time for general availability of qualitative courses of the type needed, but the movement seems to be in the right direction and should be sustained and supported. It is only through such courses that personnel with in-depth understanding, well-informed awareness and research experience will evolve to provide future leadership for Chile's evolving education system. Teachers have an incentive to engage in such courses because they get paid more when they complete them. It might also be useful if some scholarships were available for high quality selected applicants who would undertake studies in areas of particular importance to the Ministry.

### **Educational research**

Because of the strategic importance of its education system for Chilean society, it is key that it be supported by investment in high quality applied and basic educational research. The review team had the benefit of meeting a number of researchers from universities as well as from private research foundations, such as PIIE (*Programa Interdisciplinario de Investigaciones en Educación*), the Centro de Estudios Públicos, and Asesorías Para el Desarrollo. The team learned about educational research recently carried out and currently under way. This included studies such as evaluations of the P-900 and the full school day, a study on schools' receptivity to new programmes, a study of dropout patterns from school, a study of the *planes de acción* (action plans) of the "high schools for all," a study of effective schools in areas of high poverty, research on school management, on ICT in education, on the predictability of university entrance examinations, on the formulation of university selection tests, on the effects of teacher salary incentives, on aspects of SIMCE, and on teacher evaluation. These are all areas of importance needing serious research by Chilean researchers.

Bearing in mind the heavy emphasis in Chile on the evaluation of student achievement outcomes through SIMCE, the team was interested to learn of new research on instruments for measuring affective outcomes such as social, emotional and self-esteem aspects, as well as values education, which are all part of holistic education. A recent report of the World Bank also drew attention to the value of assessing pupil motivation, self-perception, self-control and self-efficacy in order to chart pupils' personality profile, and to channel their



energies according to their strengths.<sup>61</sup> The system has also benefited from a number of other research studies by authors such as Beatrice Avalos. The World Bank has conducted a number of studies including reviews of the MECE studies for primary and post-primary schools.

Despite this evidence of research activity, the review team formed the opinion that not all was well with educational research in Chile (a situation by no means unique to Chile). In the first instance, it seemed that the proportion of the education budget applied to educational research is very small. Educational research does not seem to be conceived as an integral part of budgeting for the system. The financial support tends to be of a sporadic, stop-go variety. Resources for longitudinal studies and basic research seem to be very sparse. Quite rightly, the Ministry employs public competitive bidding for some of its research projects. It is rightly concerned to ensure that highly competent and qualified researchers are capable to carry out the research. In relation to a critical mass for large-scale research, the review team was pleased to learn of co-operation between researchers in the University of Chile and the Catholic University, which allowed for a pool of 40 researchers. The team also learned that the Ministry was sometimes impatient with the results of research findings, if they did not yield favourable outcomes on developments. One of the weaknesses of past efforts is that new materials and workshops were not piloted and so there were missed opportunities to use formative evaluation to improve implementation of the reform. As the researchers quite rightly pointed out, some of the problems in the system are of a structural character, embedded in the political, regulatory framework, and are less of a pedagogical character. The researchers also drew attention to the fact that while schools have a role to play in the amelioration of difficulties, they are not a social panacea, and they should not be subject to unreal expectations. Researchers also pointed to difficulties they faced at times in gaining access to up-to-date, relevant research data from official sources. International studies such as those by the World Bank tended to be compartmentalised and not readily disseminated.

As in many countries, there are problems in the dissemination of research findings.<sup>62</sup> This has disadvantages for the research community, but also for the wider interested community, particularly professionals involved at various levels of the school system, who would benefit from the research if it were

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<sup>61</sup> World Bank (2000), p. 11.

<sup>62</sup> There have been recent efforts by the Ministry to disseminate research results through its web page where there is access to a digital library which includes information on research and evaluations carried out or directed by the Ministry. There is also a “*Compendio de Evaluaciones*” which contains information on all Ministry evaluations since 1998.

available in appropriate formats for their use. This leads to a failure in the harvesting of worthwhile research. There is a need for more analysis of existing research that would have a value-added dimension. Ideally, this work should seep into the discourse of the educational community and some of the interested general public. Research findings should also be more intentionally drawn upon to feed into and energise various in-service teacher education courses.

It seemed to the review team that there were weaknesses in the co-ordination of research, although since 2002, there has been a Directory of Studies and Evaluations aimed at co-ordinating research within the Ministry defining issues and topics needed to be addressed by research. Various involved agencies had little contact with, or knowledge of, the research being conducted by others. A unit of the Ministry should adopt a more pro-active stance in relation to this co-ordination. It should issue periodic digests or abstracts of the outcomes of research and assist in the publication of research studies of significance to Chilean education. Researchers complained that, at present, good academic research is unduly held up for several years before it is released publicly to other academics.

Such an agency could also act as a fulcrum for the identification of gaps in the educational research agenda, of which there are many. One such gap is research on strategies needed for the implementation of a major educational reform. While studies exist on specific projects and levels of success achieved, there seem to be no macro analysis, drawing on international studies in the area, on understanding of the contexts, issues, problems, attitudes, mechanisms, resources, timing, supports, training, political strategies, modes of evaluation, and so on, which are involved when a society seeks to achieve major educational reform. Because of its nature, education tends to be tightly enmeshed in the religious, political, economic, cultural, sociological, employment traditions of a society. To propel it successfully into new and very changed relationships with such elements is one of the most difficult tasks a society can undertake.

## **Recommendations**

### ***The teaching force***

The review team offers the following policy advice concerning the teacher corps:

- It is strongly recommended that the Ministry of Education continue to pursue its policy agenda in a general sense of partnership with the teaching body and other relevant educational agencies.

- When and where possible teachers' conditions of employment, including salary, working hours, class size and the length of the incremental scale, should continue to be improved.
- The Master Teacher programme should be promoted to help more teachers apply and succeed in achieving certification as Master Teachers.
- The age range of the teaching force and of staff in teacher education departments is imbalanced with large numbers of older personnel. In the absence of mandatory retirement ages and of satisfactory pensions the tendency is for such personnel to stay on as long as possible. Further work needs to be done to improve incentive schemes for earlier retirement and to improve pension provision. There is a need for more "new blood" in the system, with energy, idealism, new attitudes and new skills.
- It would be desirable to establish a more comprehensive data bank on the teaching force, with improved statistics and analyses of trends, including retention patterns, salaries by sector, hours worked by sector, etc.
- The appointment, role and training of school directors should be carefully reviewed. Appropriate qualifications and experience in educational leadership should be a prerequisite for appointment. In most cases, the role should emphasise more the instructional leadership dimension and management skills; the 5 year term should be reviewed; more specialised training should be available for those in post and those aspiring to posts, and directors should be given a greater role in staff appointments.
- The role of school supervisors should be re-defined, with a greater emphasis on a pedagogic advisory role and up-dated training provided. Incentives for retirement or re-deployment should be available for those unable to undertake the newly defined role.

### ***Initial teacher education***

The relationship established by the Ministry with the universities on the initial teacher education project seems to be improving teacher education. It is very important that this be built upon and efforts made to sustain and extend the reforms in initial teacher education. Explicit benchmarks and accountability should be introduced to speed up the reforms towards more explicit changes in

the curriculum in practice, with more precise attention to teaching and learning and content knowledge. Greater capacity is necessary in subjects such as language, mathematics, sciences and social studies, in order to support implementation of the new curriculum. Teacher education must also be linked more closely to teaching the new curriculum. A possible extension of the support to reform schools of education should also explicitly encourage interaction and collaboration with other faculties in the universities, and with schools of education in more industrialised nations. Specific recommendations include:

- The career structure and incentives of staff in university education departments should be reviewed with the aim of rewarding innovation and entrepreneurship.
- Central to the reforms in initial education should be a deepening and extension of practice for student teachers in schools, with good mentor teachers, and with more opportunities to integrate what they observe and learn in those practices with the rest of the curriculum in the education faculty. It is a matter of importance that more formal recognition and response be given to the school-based co-operating teachers for their involvement with trainee teachers.
- Consideration should be given to extending the number of special education teachers and remedial teachers trained and available to public schools with large numbers of pupils with learning difficulties.
- Greater efforts are necessary to attract to the teaching profession qualified candidates of Mapuche descent. Scholarships ought to be made available for talented Mapuche students to complete teacher training and so create a unique policy instrument to implement the inter-cultural, bilingual agenda.
- Institutions should introduce rigorous forms of evaluation of the theoretical and practice work of student teachers leading to certification which they are prepared to stand over, testifying to standard of training achieved by the students. Specifically, graduates should be tested on content knowledge and evaluated in terms of their ability to teach the required curriculum.
- It is highly desirable that all teacher education courses, whose graduates receive recognition by the State as teachers, should undergo accreditation processes.

- Quality assurance mechanisms need to be introduced to ensure that the standards of initial teacher education courses through distance education are of the required standard.
- Greater vigilance needs to be exercised regarding the category of “authorised” teachers, which, at about 10%, forms a high proportion of the teaching force. One of the two aims of national policy is quality; there may be slippage in this criterion with regard to authorised teachers.

### ***Induction of teachers***

Even if it is not possible at present to introduce a formal induction system for newly trained teachers, a reduced workload should be facilitated in the first year, with some designated support from the technical-pedagogic staff member.

### ***Continuing professional development of teachers***

Continuing support to teachers should move away from the more general forms of training that have characterised teachers’ workshops in the recent past in Chile towards specific and more structured support to develop subject-specific pedagogies and to help groups of teachers develop skills to teach to their particular students those contents. In the very short term, intensive support should be given to teach literacy in basic education. One way to do this would be to tap onto the reforms that have already been successfully implemented in the classroom. For example, it might be possible to develop high quality lessons in language and mathematics adapted to the Chilean curriculum and distribute them on CDs or via the Ministry’s website.

To help teachers use computer skills to integrate ICT into curricular practices, *Enlaces* should emphasise more specific guidance, provide exemplars of good practice, and operate hands-on workshops in such applications.

Consideration should be given to the Scholarships Abroad Scheme in its current format to assess whether its positive impact is worth the expense involved in relation to priorities for the policy of the continuing professional development of teachers in contemporary circumstances.

### ***Educational research***

There is a need for a more co-ordinated policy by the Ministry on educational research. Such a policy needs to establish a clearer budgetary sub-head for such research, set out its priorities for both basic and applied research,

improve access to relevant data for researchers, support the better dissemination of such research, and try to ensure that the findings of research influence educational policy and practice.



## Chapter 3

### STUDENT EVALUATION

This chapter focuses on student evaluation, describes the National Evaluation Programme and how it is used and international assessment programmes, such as PISA.

#### Introduction

With the democratically elected government in 1990, reforms to the Chilean education system focussed on ensuring equity of access and increasing the quality of education, with special emphasis on students scoring lowest on national evaluations. In implementing their reforms, government in the 1990s has relied increasingly for stimulating and monitoring the reforms' success on a standardised national testing programme – *Sistema de Medición de la Calidad de la Educación* (the System of Measurement of Quality of Education – SIMCE).

There are, however, serious questions about the appropriateness of SIMCE in its present form to evaluate school improvement, or to stimulate the improvement of teaching and learning. The review team was impressed with the seriousness of the effort to monitor reforms but concerned that the instrument used is not providing the information needed to improve student learning.

SIMCE and its predecessor in the early 1980s, the PER (*Prueba de Evaluación del Rendimiento*), were designed to provide information to parents about school “quality” in an educational market where schools compete for students. The system never functioned in this way, since test scores were only collected as school averages and supplied to schools, not to parents. Nevertheless, when the SIMCE test was instituted in 1988, many viewed it as a measure of school “effectiveness,” and continue to do so. The new government, in turn, used SIMCE results in the early 1990s mainly to identify low-performing schools in order to invest additional resources in them and to monitor the effect of those investments. More recently, the SIMCE has been used as a main measure of school quality and improvement in Chile.



SIMCE assesses students in grades 4, 8 and 10 in language, mathematics, history and geography, science and the natural and social environment. The information collected through SIMCE serves a number of key policy functions in addition to measuring student achievement year over year. The additional functions of SIMCE data include: informing policy development and programme design by the Ministry of Education; measuring the extent of the implementation of the new curriculum; supporting parental choice and accountability; identifying poor performing schools for additional support, and providing the basis for incentive pay for teachers. The design, administration and analysis of SIMCE are considered by many to be a significant achievement of the educational reforms in Chile. However, the review team also heard concern that the diversity of objectives currently being served by SIMCE needs to be reviewed to ensure the quality and viability of the testing regime.

The annual release of national and school results from SIMCE fuels a debate about public education that is larger than what is measured specifically by the testing programme. Increasingly, standardised testing results are viewed by the media, politicians, and the public as measures of the success or effectiveness of the education reforms themselves. This debate has been heightened by the Ministry's participation in a number of international testing regimes, including TIMSS in 1999 and PISA Plus in 2001. It is clear from the importance placed on SIMCE results and the participation in international testing, that the government views a quality education system as a significant contributor to the country's global competitiveness. Secondly, it appears committed to measuring the performance of the education system and reporting publicly on improvements.

SIMCE has been refined a number of times since its inception in 1988 – most recently to align more directly with the expectations set out in the new curriculum. The new curriculum, phased in on a yearly basis from 1997-2001, consists of a national framework that all schools are required to follow and more detailed subject specific programmes of study by grade. The reform of the curriculum focussed on providing greater specificity in terms of content, learning objectives, teaching activities and evaluation. The Ministry is committed to a “continuous improvement” model for reviewing and revising the curriculum.

With the curriculum fully implemented and fifteen years of experience with SIMCE, the Ministry is well positioned to look at the strengths and weaknesses of the current evaluation regime and its linkage to the curriculum and the classroom. The key questions facing the Ministry are those faced by most countries and regions with similar evaluation regimes:

- Is SIMCE as currently designed, an appropriate measure of education quality?
- How can the results of standardised testing be used more effectively to improve teaching and assessment in the classroom?
- Will setting standards and improvement targets for SIMCE improve student learning and outcomes?

The Ministry has recognised the importance of addressing these questions by establishing the Commission for the Development and Use of the Measurement System for the Quality of Education. The Commission has been asked by the Minister of Education to examine how SIMCE can more effectively contribute to raising the quality of education in Chile. Specifically the Commission will make recommendations on what the “core business” of SIMCE should be *i.e.* What should it measure and report on and to whom; can the measurement system itself contribute to the improving quality and if so how. The Commission held a series of public consultations with education stakeholders and submitted its report to the Minister in December 2003. The OECD review team hopes that the Commission will address many of the concerns raised about SIMCE in this report.

The observations and findings by the review team as they relate to the national evaluation program, classroom evaluation, and Chile’s participation in international testing programmes are summarised below.

### ***National Evaluation Programme (SIMCE)***

#### *What is measured*

The administration of SIMCE is a significant undertaking. The number of tests applied in each grade, as summarised in Table 6, is challenging. In the past, grade 4 has been tested in even years, grade 8 in odd years. The grade 10 test was applied for the first time in 1994, then again in 1998 and 2001. There have been anomalies in the schedule: for example, the 1998 grade 4 SIMCE was applied in 1999, and the grade 8 SIMCE in 2000. Currently, the test is back to its original pattern.

External examiners administer the tests. Classroom teachers are not involved. The testing methodology is based on Item Response Theory and is accompanied by a questionnaire for parents, teachers and school principals.

Table 6. National assessment SIMCE

	Number of Pupils	Number of tests	Number of schools	Number of test Administration	Curriculum areas
Grade 8 (2000)	251 618	1 006 618	5 044	8 310	- Language (Spanish) - Mathematics - History and Geography - Science
Grade 10 (2001)	192 985	385 970	1 944	5 902	- Language (Spanish) - Mathematics
Grade 4 (2002)	274 864	824 592	6 145	9 863	- Language (Spanish) - Mathematics - Understanding of Nature and Social Environment

Source: Ministry of Education, 2003.

SIMCE measures student achievement in core subjects by classroom, school, nationally. The results are comparable between schools and between schools with the same “statistical profile”. Accounting for changes in test design, the data are comparable from test year to test year since 1996. However, the testing cycle does not necessarily allow for the comparison of the same cohort of students. The Ministry is aware of this problem and is discussing options for addressing it. The review team has specific recommendations in this regard, discussed below.

As indicated in the Ministry’s background report to the OECD mission (Chapter 1), SIMCE national results have, at best, risen slightly over the last five years. Low performing schools that have received targeted assistance from the Ministry have shown more improvement. This lack of improvement is worrisome but needs to be balanced by the consideration that Chile is still in the early stages of implementation of the new curriculum and, equally importantly, the full school day. The first cohort of students tested in grade 4 languages and mathematics that would have benefited from the new curriculum from grade 1 were those tested in 1999. Information from the Ministry indicates that only 53% of the teachers of language believed they were covering 75% of the curriculum in the year 2000. There is clearly an implementation “lag time”

between what is taught, what is learned and testing. It can be assumed that as teachers become more proficient with the new curriculum, results will improve.

Finally, teachers and school administrators who met with the review team did not express concern for the lack of significant improvement in the national SIMCE results. Understandably, they were more concerned with the school and classroom results.

### *How results are reported*

SIMCE results, which are released by the Minister of Education, report at the national level the mean score for each subject tested compared with previous years. The results are also released to the public by type of school, region and socio-economic status. The school in turn receives a detailed report of their results that includes the mean score for the school and each class compared to previous years. Their results are also benchmarked against similar schools, the national mean score and against a sample of key questions.

It was clear from the discussions with the review team that teachers and school administrators have embraced SIMCE as a credible measure of student achievement. Any concerns expressed by teachers and school administrators centred on the need to better understand the results at the school level and the desire for standardised testing in other subjects or grades.

Teachers and school administrators who spoke with the review team knew their school results. In particular they were aware of whether their school was “above” or “below” the national mean. Whether an explicit policy or not, it would appear that the national mean has come to represent the acceptable standard for performance. It is perceived by most teachers and administrators as the “pass” mark. This perception is reinforced by the use of SIMCE data to identify P-900 schools or critical schools that are targeted for additional assistance.

The perception in the field that “the mean” equals an acceptable standard of performance raises the question of whether it is the desired standard and whether it provides a sufficient incentive for continuous improvement in the quality of education in Chile. Maintaining, or publicly confirming the national mean as the standard, would reinforce the importance for the government to continue to invest in improving those schools below the mean.

An alternative or complimentary approach would be to set a national standard and/or standards by school characteristics for an expected level of achievement. SIMCE results would then be reported against this benchmark.

This approach provides the government with a different policy choice, as it would require, in conjunction with teachers and school administrators, the government to invest in improving education for all students with the related organisational and fiscal pressures.

An agreed set of standards would enable schools to link their improvement planning to identifiable multi-year goals. Such an approach would require careful analysis of the current SIMCE data to determine what the data actually “means” for what students are learning and not learning in their classrooms. It would appear from conversations with Ministry staff that the SIMCE data is robust enough to support this analysis should the government wish to move in that direction.

SIMCE results are currently reported by school and classroom, individual students do not receive their results. This reflects a desire to ensure that no individual student is unfairly labelled or excluded as a result of the testing. A number (but not all) of the principals and teachers with whom the review team spoke believed that providing individual results could enable students, teachers and parents to better assess the learning requirements of the students. Many also believed that the results would be more useful to the schools if they received them in a shorter period of time. This was particularly important for the grade 8 testing where the results are received after the students have left elementary school and gone on to secondary school. Parents are informed, mostly through their school councils, of the school results.

One of SIMCE’s most serious deficiencies in serving as a tool for school improvement is that it is applied to different groups in the same grade (4, 8, or 10) every two years. Thus, it is difficult for anyone – either in the Ministry, municipality, or the school – to assess accurately whether a school or teacher is producing real gains, or whether class and school composition has changed slightly, bringing scores up or down. In many cases, it is possible to tell whether a teacher is doing especially well (or more likely, poorly) with a group of students in a particular grade. SIMCE in its present form would pick that up if it is applied in that year. But to capture school or teacher *improvement*, the SIMCE test would have to be applied in, say, the third and fourth grades or, say, the seventh and eighth grades, every year. That way, it would be possible to measure the gains students made in each class and each school in the fourth and eighth grades.

Short of expanding testing in this way, the timing of present tests could be altered to measure gains in each school between grades 4 and 8 and between the grades 8 and 10. Currently, the grade 8 SIMCE test is generally applied in odd years, and the grades 4 and 10 tests generally in even years. This makes it

impossible to compare the scores of grade 4 in a school with the scores of grade 8 in the same school four years later. It happens that the 1998 grade 4 SIMCE was given in 1999, and the 1999 grade 8 SIMCE was given in 2000. This makes it possible, on a school by school basis, to compare the average grade 4 scores in 1996 with the average grade 8 scores in 2000. Similarly, it will be possible to compare 1999 grade 4 scores in each school with 2003 grade 8 scores. No such comparison can be made between grade 8 and 10 scores, because of the timing of those tests.

This raises a more general issue of the purpose of SIMCE test. In the 1980s, the testing programme was initiated by the government to provide a mechanism that would serve to increase competition among schools (see Chapter 4). In its present incarnation, SIMCE's aim, as combined with teacher salary incentives (SNED – *Sistema Nacional de Evaluación del Desempeño de los Establecimientos Educacionales Subvencionados*) is more to stimulate improvement in schools through increasing competition and pushing teachers to focus on student outcomes. SIMCE also serves as a benchmark for estimating over time how much Chilean students are learning. Besides the question already raised of whether SIMCE in its current form is an accurate way to measure school gains, members of the review team heard from Chilean researchers that more and better information could be collected about individual teachers and other aspects of the schools as part of the SIMCE survey in order to try to explain the factors that contribute to higher and lower student test score gains. For example, in 1992, Taryn Rounds Parry, an American researcher, gathered data from 50 private subsidised and municipal primary schools in Santiago, asking what mechanisms the schools used, if any, to select students. The results of her simple questionnaire was combined with other data gathered by SIMCE, including the results of the grade 4 test, to show that the selection variable was the single most important explainer of student outcomes. Yet, SIMCE has never gathered such data since. However, SNED penalises selectivity when evaluating schools.

Elsewhere (Chapter 2), the review team emphasised the importance of greater investment by the Ministry in research in order to develop more research-based decision making. The SIMCE evaluation is a potentially major source of information for understanding the effectiveness and efficiency of Chilean education. Better co-ordination of research goals with the timing and form of student testing would yield much more useful and usable data for research purposes.

### *How SIMCE information is used*

As noted above, the Ministry makes extensive use of the SIMCE data both in terms of providing feedback to the system on student achievement and for monitoring, designing and implementing policies and programmes. It would appear, in fact, that there is a significant gap between the capacity of the Ministry to analyse and use the data from SIMCE and the capacity of individual schools to do so.

Most schools discussed the results with their teachers but it was unclear to what extent it affected behaviour in the classroom. A number of principals and teachers indicated that they would like a better understanding of what the “numbers” actually mean *i.e.* do the results indicate which areas of the curriculum are being learned and which are not? It is less clear whether the results are discussed with parents – it would appear to vary significantly from school to school.

In some cases the information is used in the development of improvement plans. The regional offices of the Ministry provide support in this area to both the municipalities and to the individual schools through the assistance of the supervisors. The supervisors, in some cases, work directly with the school to analyse the SIMCE data and to develop an improvement plan. There was general consensus amongst those who spoke with the review team that this area of responsibility for the supervisors should be expanded (see Chapter 2). Given the lack of capacity at the school level to analyse the data, it remains to be determined the extent to which SIMCE results are in fact affecting teaching and learning in the classroom.

As pointed out above, a more extensive system of testing that explicitly focused on measuring test score gains at various levels of primary education would be far more useful to schools trying to improve than the present coverage and biennial timing of the test. But even then, this information must be accompanied by efforts to increase capacity to interpret results so as to improve learning in the classroom. Information is much more useful if key actors – teachers and administrators – have the tools to respond to it.

### *Classroom evaluation*

The need for consistent evaluation of students by teachers in the classroom is addressed by the Ministry primarily through curriculum documents. The curriculum sets out the learning expectations and provides support to teachers on how to teach the expectations as well as assess the student’s materials and participation. The Ministry has also committed to a continuous review and

renewal of the curriculum. The most recently released revised curriculum for mathematics and language provides greater clarity, direction and supports than the previous documents. This initiative has also been supported with an impressive textbook programme that provides subject specific textbooks linked to the new curriculum for all students.

As part of the implementation of the curriculum, the Ministry has undertaken extensive training with classroom teachers on the new curriculum. Over 40 000 teachers or approximately 40% of the profession have had some in-service training on the new curriculum. It is assumed this in-service training included not only subject specific training, but also assessment methodology.

Based on limited classroom visits by the review team, there is concern that there may be a significant gap between the sophistication of the curriculum documents and the current skills and experience of many teachers – particularly in the area of evaluation or assessment. In the review team’s school visits there was little evidence of teachers in classrooms directly using the curriculum documents. Many teachers did not appear to have lesson plans with achievement criteria and some teachers had developed their own criteria for assessment. All schools provided report cards but there did not appear to be consistent guidelines on their content or frequency. Most teachers indicated a desire for additional training on student evaluation and raised concerns about standardization of evaluation between classes and schools.

Improving the quality of education and student achievement necessitates focussed long-term attention on the skills and roles of the teacher. The importance of SIMCE in measuring student achievement in Chilean education highlights the urgency to ensure that all teachers are “assessment literate” in the classroom. In addition, information from the Ministry indicates some inflation of marks over the last twenty years that needs to be addressed.

Consideration should be given by the government to providing additional in-service training to teachers on student assessment. In addition, the development of support resources by teachers such as exemplars would help standardise classroom evaluations. Providing professional training during the school day would ensure that all teachers participate and have equal access. Finally, a focussed training and support strategy to enhance the assessment literacy of teachers should be reinforced through a similar emphasis in the core curriculum of the pre-service training for teachers.

Secondly, the teachers would benefit from a stronger linkage between the information collected through SIMCE and their classroom evaluations. SIMCE would be most useful to teachers if they could apply it to their practise in the



classroom. The qualitative information collected through SIMCE surveys may be particularly useful to teachers. Many teachers who met with the review team believed they would benefit from greater access to the SIMCE questions or sample tests.

Strengthening this linkage would require a better understanding by classroom teachers and administrators of what the data on SIMCE means in relation to what is being taught and learned in the classroom. Even for high performing schools it is unclear if classroom teachers understand the implications of the data provided through SIMCE for their schools and classrooms.

As suggested above, communicating the connection between curriculum coverage and the SIMCE results would be far easier if the SIMCE test more closely estimated the school's contribution to student learning in grades 4 and 8 rather than measuring some cumulative knowledge acquired by students at home and in school, unattributable directly to the quality of teaching in grades 4 and 8. This means greater frequency of the SIMCE test and, for example, expanding it to include grades 3 and 7.

### ***International assessment***

Chile has regularly participated in international testing programmes since 1997 in reading, mathematics, science and civics. Participation in these programmes provides policy makers with international benchmarks for student knowledge and abilities and an additional credible source of quantitative and qualitative data for policy, programme and curriculum development. Participation in international testing has also been an important source of technical expertise for improvements to SIMCE.

In mathematics and reading, Chile does adequately on international testing when the results are compared to other Latin American countries (below Mexico, but one could argue that Mexico has a more selective group of 15 year-olds in the sample than does Chile because of more universalised secondary school in Chile), but is well below the mean when compared to the developed countries and to many countries in Asia, including relatively unindustrialised countries, such as Thailand and Malaysia.

The PISA Plus results were released while the team was in Chile undertaking this review. As discussed elsewhere, there was considerable media attention to the results and what they potentially indicated for the quality of education in Chile and the effectiveness of the recent reforms. International tests provide one kind of measure for comparing how students are doing. Given the

increasingly global nature of education and education reforms, they are an important benchmark. However, it is fair to say that all jurisdictions that participate are currently grappling with the same policy challenge: determining what the international test results indicate regarding the best way to support teaching and learning. It is naive to expect the media to report these results in terms other than “winners and losers”. However, it is important that educators in particular understand the limitations and potential of the information if it is to be applied effectively in improving the quality of education.

Yet, what should be of great concern to Chilean policy makers and parents is that even students from high socio-economic background families attending private schools score below the mean of European countries on the PISA tests of mathematics and language. This suggests that what students have the opportunity to learn in Chile in the years before they reach the age of 15 (the age group taking the PISA test) even if they go to select private schools is below what the average European youth is exposed to in school.

### ***Recommendations***

Given the above observations gathered during the review, the Ministry should consider the following recommendations:

- Clarify the primary purpose of SIMCE to focus on student achievement as a measure of quality of education.
- Reorient the timing of grades 4, 8 and 10 SIMCE all to even or odd years, so that test scores of students in grade 8 can be compared with their test scores four years earlier, and test scores of students in grade 10 can be compared with their scores in grade 8 two years earlier.
- Undertake a comprehensive training programme to improve the understanding of teachers, administrators and parents of what SIMCE measures and how they can use SIMCE information to develop improvement plans and improve classroom learning. This will involve reviewing how the current SIMCE results are reported to the schools and what additional information schools may need.
- Consider setting school-based standards for student achievement as measured by SIMCE. Support this standard setting with in-service training for teachers and administrators.

- If standards are established, explore the possibility of also establishing improvement targets that focus on cohort gains and on closing the gap between low and high performing schools.
- Undertake more extensive in-service training and professional development for classroom teachers to enhance classroom assessment literacy. Accompany this training with appropriate resources.
- Encourage greater ownership and use of SIMCE data by enhancing the capacity of schools to access and analyse the information from SIMCE testing and surveys.
- The primary measurement of the “state of the education system” in Chile is the SIMCE results. To diversify the measurement of “quality” of education and perhaps encourage a more complex public debate, the Ministry should consider identifying and reporting regularly on additional indicators of the quality of education. These could include, for example, retention rates for secondary schools, number of repeat students in elementary, graduation rates, absentee rates, percentage of full time and part time teachers, student/teacher ratios.
- Consider, should resources be available and as a *significantly lower priority* than the above recommendations, reorienting SIMCE to conform more closely to measuring the impact of teacher and other school inputs in the particular grade being tested rather than a measure of difficult-to-identify cumulative effects. This would imply testing the same students in third and fourth grade and in seventh and eighth grades.

## Chapter 4

### INCENTIVES, EDUCATIONAL MARKETS, AND EFFICIENCY

This chapter deals with incentives, educational markets and efficiency; it looks at the subsidising of the private education system and more competition among schools as means of increasing student achievement. It discusses and compares the efficiency of private schools versus municipal schools as well as the effect of achievement-based teacher pay on the achievement of students.

Chile has distinguished itself in the world of education by its experimentation with reforms that focus directly on improving school “efficiency.” Chile has introduced market-type competition among schools, subsidised private schools that entered into “private” contracts with teachers, implemented pay incentives for teachers based mainly on average student performance in the school, and allowed private subsidised schools to charge tuition, on the assumption that “better” schools would be able to involve parents more by having them contribute financially. These reforms unambiguously had as their aim to increase student achievement (effectiveness) and to lower the *public* and *total* cost of effective educational delivery (efficiency). Whether the reforms have actually accomplished these goals is an important issue in Chile, and colours thinking about the direction of future policies.

Before going on to consider the effectiveness and efficiency questions, the review team has to note that despite a major political change in 1990 from military to democratic government, the Chilean market reforms of the 1980s have had a continuing impact on the shape of educational interventions in the 1990s. The most important of these earlier reforms, of course, is the voucher system, where the State subsidised private schools to essentially the same level financially as public schools. In 1980, 14% of Chilean K-12 students attended private schools that received some public subsidy, and another 7% attended more elite, completely private schools; by 1990, 32% of students attended private subsidised schools, and by 2001, enrolment in such schools had reached about 37% of total enrolment. Adding in the 9% of students in elite private schools leaves a slight majority of Chilean students in municipal schools. In more densely populated areas, particularly metropolitan Santiago, however, total private school enrolment (voucher and unsubsidised) is much higher, closer to 61%.

The review team's interviews and visits to schools made it clear to team members that private management of publicly funded schools is widely accepted as part and parcel of a Chilean version of "public" education. Parents value school choice, and, despite a continuing sense among public school teachers and administrators that subsidised private schools – by refusing to take the most difficult students and by contracting teachers on a year-to-year basis (often part-time) – do not fulfil the same public role as municipal schools, municipal schools usually have co-operative relations with private voucher schools in their neighbourhood. This acceptance has, in turn, affected public policy in education in the 1990s. There appears to be a generalised rationalisation at policy levels of the importance of market-style competition among schools to produce greater effectiveness and efficiency. Policy makers who are not pro-marketisation of education, are nonetheless open to use market incentive approaches, such as implementing a performance premium for teachers, based on school average test score gains and allowing subsidised schools (both private and public) to charge fees over and above the public subsidy. The notion that a national testing system is an essential element in driving school improvement is also deeply held.

The review team came to understand that even if the voucher system and other policies associated with a market view of education were shown not to improve student achievement, they would be difficult to overturn. Nevertheless, because the view of these policies plays such an important role in the future direction of educational reform in Chile, the review team feels that it should analyse the evidence concerning their actual impact on educational improvement, and what the evidence suggests for Chilean reforms.

### **Is Chile's system of subsidising private education an efficient means to increasing student achievement?**

Chile's main educational "innovation" in the 1980s – hailed by conservative thinkers such as Milton Friedman as a major advance in creating a more effective and efficient educational system – was to provide financial incentives to private school operators that put them on equal financial footing with public schools. Making most private schools as accessible financially to parents as public schools provided an incentive for many to enrol their children in privately run schools. According to proponents of this scheme, this should have greatly raised student achievement in Chilean schools and lowered the cost per student of producing this achievement.

One outgrowth of the voucher reform was that Chile's Ministry of Education implemented a national test beginning in the early 1980s – the PER (*Prueba de Evaluación del Rendimiento*), as it was called – created and

administered by the Catholic University of Chile. The original intent of the test was to provide information to “consumers” of education that would help them make “better choices” among schools. In theory, if parents know the average score of students in each school, parents would be able to make more informed choices among schools. However, test scores for each school were not published in the 1980s – indeed, not until 1996 – and a school’s average score was only released to the school itself. There was also enough resistance to testing to suspend it between 1985 and 1988. Thus, the original intent of the test, to increase competition among schools, was not realised by the military regime, even though it fully supported the privatisation of Chilean education.

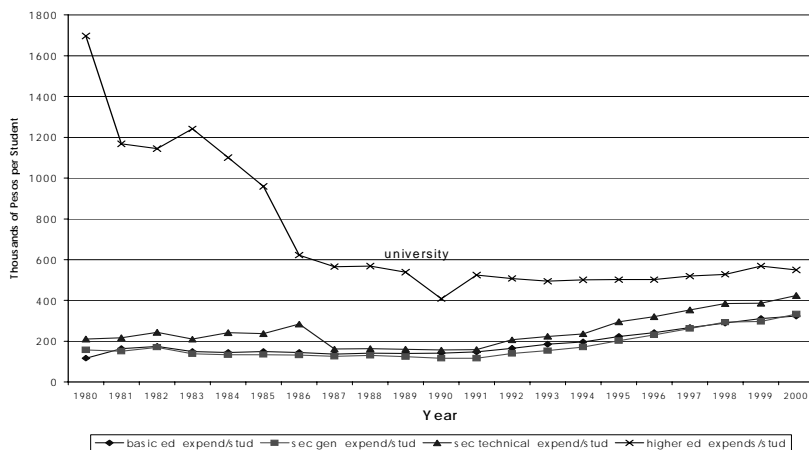
Public spending per pupil, however, did decline in the 1980s, especially for university education, but also at the secondary level at that (and the primary level) mainly through declines in teacher salaries. Thus, it could be argued that the “efficiency” of the Chilean education system improved – students were taking the “same” education at much lower public cost and it was possible to greatly expand secondary education enrolment in this period at relatively lower cost. This decline in per pupil spending at the basic and secondary levels was only partially a specific policy associated with decentralisation and privatisation. Chile went through a major recession in the mid-1980s, due to declining commodity prices. As in many other Latin American countries, public spending on education was a victim of the 1980s economic decline, and, as in those other countries (*e.g.*, Mexico and Argentina), secondary school enrolment expanded at lower cost, even though in Chile primary enrolment fell.

It is difficult to assess whether the quality of education suffered significantly because of lower spending per pupil. PER and later SIMCE test scores were not comparable until the mid-1990s (see Chapter 3), so there is no way of knowing whether average test scores declined in the late 1980s. There is a general sense that the quality of schooling fell after 1985, and that the performance of students from lower-income families fell in both absolute and relative terms, but this may not have been the case.<sup>63</sup> The main savings in the education system – and this was a specific policy of the military government – came at the university level, which still remains mainly financed by family private contributions. The notion that privatising educational costs contributed to educational “efficiency” also became deeply imbedded in Chilean educational policy culture.

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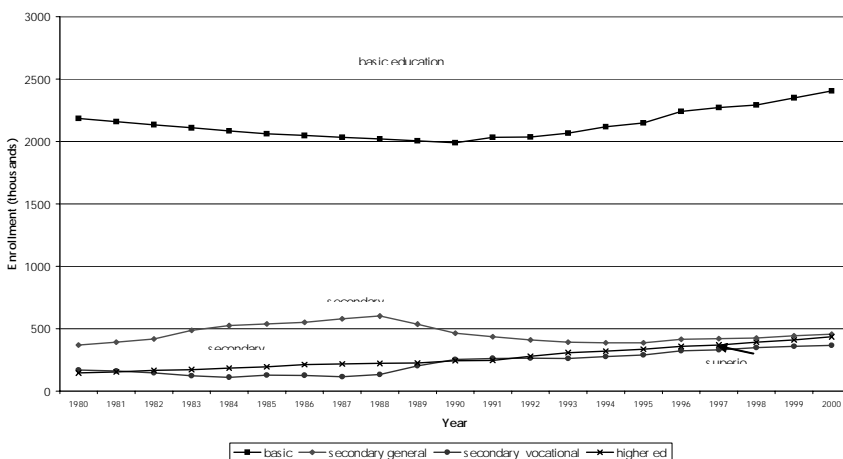
<sup>63</sup> Prawda (1993).

Figure 1. **Government expenditures per student, by level of education, 1980-2000 (2000 CLP)**



Source: Estimated using data on public spending and enrolment by level of education supplied by Ministry of Education.

Figure 2. **Enrolment by level of education, 1980-2000**



Source: Enrolment data supplied by Ministry of Education.

The efficiency discussion in terms of educational privatisation has carried on into the 1990s. The existence of a large body of test score data led to the publication in the 1990s of several studies analysing test score results – mainly comparing student performance in private and public schools. From initially crude comparisons, as better data became available by the late 1990s, the

research became more sophisticated, attempting to correct more accurately for the inherent selection bias between public and private school students. Furthermore, once the national SIMCE test, given every two years on even years to grade 4 and every two years on odd years to grade 8, was made comparable, beginning in 1996, from application to application, policy makers and journalists could compare results over time.

What does all this analysis show regarding the effectiveness and efficiency of the Chilean school system? Educational effectiveness and efficiency are not easy to measure, but there seems to be considerable agreement in Chile that student achievement scores are an important indicator of school effectiveness. The Ministry has faced considerable criticism from the opposition because average SIMCE scores remained essentially static from 1996 to 2002, the only period for which scores are comparable. Remarkably, data presented to the review team show that this is the case for municipal, subsidised private, and paid private schools. That is, student achievement in municipal schools unadjusted for socio-economic background is consistently lower than in private subsidised schools and much lower than in private paid schools, but the differences in achievement among the three in 2002 remain about the same as in 1996, and all three achievement curves tend to be similarly flat.

Despite the similar performance by students over time in private and public schools, opposition researchers told the review team that one of the main problems of the system – hence the main reason for static student achievement in Chile – is the lack of sufficient competition among schools for students; *i.e.*, the market system is not allowed to function to its full extent, in large part because information for parents on school performance and on the performance of their individual children in their school is restricted (currently, the school does not release individual student test scores to parents). In other words, because the original intent of the national testing to increase competition among schools by publishing school average test scores was never realised, the market never functioned “as it should have”. The logic of the argument is that if parents were to have more information about student performance, they could act more rationally to choose the “right” school for their child, or at least choose a nearby school with the highest test scores. This, in turn, would create “real competition” among schools, would increase effort (mainly in municipal schools), and would therefore improve student performance. Reading between the lines of this argument is the view that the school system is still not sufficiently privatised, and if it were more privatised, test scores would rise.



## Would more competition among schools improve student achievement?

The review team was not convinced by these arguments, for several reasons. The most important were the data showing that in the six years in which test scores were comparable, students in private schools made no greater gains on either the grade 4 or the grade 8 test than students in public schools from test year to test year. During these past six years, there has been at least some shift (about 3-4%) of enrolment from municipal to private subsidised schools, with apparently no positive effect on average test scores. Further, there is nothing to suggest that in the decade previous to 1996, average test scores rose significantly.

Beyond data on average test scores, it was not obvious to the review team that the underlying theory of increasing effectiveness through competition works in practice. In visits to schools, discussions with public and private school administrators suggested that in some ways they did compete with other schools by trying to improve test scores, but they mainly used other tactics to attract families to their schools. The most important factors attracting families to private schools seemed to be the average socio-economic class of the peer group (including the absence of the worst behaved students in private schools) and access to academic secondary school in the same establishment, with the potential of passing the university entrance examination.<sup>64</sup> Municipal schools have tried to become more attractive by offering large computer labs and by being able to convert more rapidly than their private competitors to full day schools.

The anecdotal information gathered in conversations with school personnel is supported by econometric studies of test score results over the decade of the 1990s. The rapid growth of privately managed, publicly funded education during the 1980s slowed but continued into the 1990s, and, as a result, municipal education lost hundreds of thousands of pupils to private competitors, mostly new, “for-profit” (meaning that they were run by individuals who derived income from the school) schools that were created in response to the voucher system. Yet, researchers have not been able to produce convergent answers on the positive effects of competition on student performance.<sup>65</sup>

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<sup>64</sup> Nevertheless, according to 2002 SIMCE data (grade 4), 47% of parents affirm that proximity to home is one of the 3 most important motives for sending their child to a school and 30% say that school learning results is one of the 3 most important reasons for choosing one.

<sup>65</sup> Hsieh and Urquiola (2002).

One reason it is difficult to identify a positive “competition effect” is that the shift from municipal to private voucher schools appears marked by “cream skimming,” of easier to teach pupils by private schools. “Cream skimming” would tend to lower average test scores over time in municipal schools even as competition might tend to raise scores in those same schools. It is difficult to identify the two separate effects. So competition might be stimulating municipal schools to greater effort, raising test scores, but these same municipal schools might simultaneously be enrolling more “difficult to school” students.

Members of the review team heard many complaints about “cream skimming” from municipal school teachers and administrators, in low income areas, even in some schools that scored high on the SIMCE test relative to their socio-economic grouping. The most common complaint was that private voucher school competitors in the neighbourhood selected their students, whereas municipal schools had to accept everyone, including special education students. The review team visited municipal secondary schools that selected their students, but these are rare compared to selective private subsidised schools. So even within a group of families with similar parent education, those who attend private school are, on average, likely to come from more motivated families with more “interest” in their children’s education, and, in today’s market, willing to pay at least some tuition to have their children attend private schools.

The review team sees no harm and probably a great deal of good, information-wise, in releasing SIMCE test score results to parents of students in grade 4 and 8. But it is not clear what effect this is going to have on parental choice or school efficiency, especially because of the nature of the SIMCE test.<sup>66</sup> The SIMCE test is currently given in three grades (4, 8, and 10), so it provides some comparability of school and individual results with comparable social class individual results in other schools, assuming that available socio-economic background measures on individual students capture students’ “starting point” on their school performance. However, as the team’s discussion of evaluation pointed out, students’ socio-economic background as measured by parents’ education is an imperfect measure for a student’s starting point. Obviously, if a child has a relatively low score on the grade 4 test, the parent could interpret that as a school’s or teacher’s failure to provide an adequately good education. But it would be far better to know whether the child and the

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<sup>66</sup> As important for the review team in assessing the potential effect of increased information for parents on their schools’ and children’s test scores was the knowledge that in many developed countries, test scores have long been made available to parents with little or no impact on average student performance.

school made a large or small *gain* in test score between grades 3 and 4, between grades 5 and 6, etc. Evaluating schools in terms of *gains* made by cohorts of children from year to year would also be a much more useful way to evaluate the success or failure of a school than knowing whether the absolute score in the grade 4 this year was higher or lower than the grade 4 score two years earlier. Gain scores would also provide policy makers with much more accurate information about the performance of different kinds of schools, namely private subsidised and municipal.

### **Are private subsidised schools more effective than municipal schools?**

Another way to think about the efficiency of Chile's school system is that pupils with similar parents' education and general socio-economic status should achieve better academically for the same cost per pupil in private subsidised schools than in municipal schools, or, at worst, they should have the same achievement scores as in municipal schools but get them at lower cost. If the latter were the case, the achievement problem might not be solved by privatisation, but the public sector would spend less on schooling than if a higher fraction of students were in publicly run schools.

Considering that more motivated families are likely to send their children to private schools in Chile, and even subsidised private schools are, on average, more likely to be at least somewhat selective of their students, it is surprising that the empirical evidence in the 1990s shows that students of similar socio-economic status (SES) in private non-religious voucher schools (about two-thirds of all students in private voucher schools) actually score somewhat lower than pupils in municipal schools.<sup>67</sup> There is convincing evidence from the early 1990s, furthermore, that if researchers were able to match students by initial ability as well as SES, the relative scores could very well be even higher in municipal schools.<sup>68</sup> The same studies show that students in religious private voucher schools and paid private schools score significantly higher than students of similar SES in municipal schools. Again, however, these comparisons do not correct sufficiently for selection bias. Even in the case of a well regarded religious voucher school (the review team visited several of these), it is not certain that were students assigned randomly to such a school and to a municipal school, the students attending the religious private voucher school would do better academically. When the review team looked at the work of primary grade children in such private schools, it was not obvious that it was of higher quality. The review team did observe private voucher schools where

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<sup>67</sup> McEwan and M. Carnoy (2000); McEwan, P. J. (2001).

<sup>68</sup> Parry (1996).

student work was much better than in public schools the review team visited and *vice versa*. Overall, then, there may be positive difference in the average effectiveness of some categories of private schools.

What about cost per pupil in private and public schools? If students in private subsidised schools score on the SIMCE at approximately the same level as in municipal schools, but it costs less per pupil in private schools to reach that achievement level, private education would be more efficient than public. It was difficult for the review team to get access to cost data in the schools it visited, although the review team knew the general data on the monthly voucher and the average tuition paid in subsidised private schools. Municipal and private subsidised schools get the same monthly amount per student throughout primary and secondary school (see Table 1). However, many private schools receive additional income in the form of tuition payments, which, in turn, partially reduces their subsidy. There is a gradual reduction of the subsidy, which varies along with the tuition payment established by each school. If tuition payment is less than 0.5 USE (*Unidad de Subvención Educacional* worth around CLP 12 000 in 2003), there is no discount and the school receives both the full subsidy and tuition payment. If the school charge is greater than 0.5 and less than 1 USE, a marginal discount of 10% is applied on the fraction of the payment above 0.5 USE. A 20% discount is applied to the fraction of the payment above 1 USE and below 2 USE. Finally, a 35% discount is applied to the fraction of the payment above 2 USE. The maximum tuition payment is 4 USE, *i.e.*, CLP 48 000 per month. But many municipalities add on to the subsidy their municipal schools receive, and, in recent years, municipal schools are more likely to have converted to full day schools.

Other evidence also suggests that private schools spend less per pupil than public. The average age of teachers in private schools is 10 years less than in public schools. Older teachers, on average, get paid more than younger teachers. Private subsidised schools are also likely to have a higher percentage of teachers on part-time contract and to have a larger number of pupils in a class.<sup>69</sup> Public schools need to accept special education students, whereas private schools do not. Yet, as researchers have shown, costs per pupil vary much more in private subsidised than in public schools. Religious schools (a high fraction Catholic) tend to be higher cost than municipal schools and commercial non-religious schools, tend to be lower cost than municipal schools (McEwan and Carnoy, 2000). Not surprisingly, SIMCE scores in religious schools are higher than in municipal and non-religious subsidised private schools.

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<sup>69</sup> For a review of the teacher contract differences between the private and public sectors see Mizala and Romaguera (2001).

The evidence suggests, then, that students in non-religious private subsidised schools average somewhat lower SIMCE scores than students in municipal schools, but it costs less to educate them, mainly because private schools tend to hire younger teachers and have larger class sizes. They also do not have to worry about special education students and are able to avoid the worst behaving students. Perhaps this is what allows them to increase the number of pupils in a class without a decline in student achievement. Religious schools spend more per pupil, on average, than municipal schools, and are able to produce higher test scores. The least “efficient” schools are private paid schools, which are very costly on a per pupil basis, but produce test scores that are only slightly higher than the subsidised private religious schools. Yet, almost 40% of all university students come from these high cost unsubsidised schools – their “efficiency” from the parents’ standpoint is the ability to guarantee access to university education.

As a number of policy makers pointed out to review team members, subsidising private schools and allowing these schools to collect tuition, is “efficient” in other ways. The tuition collected represents about USD 200 million in private contributions annually for primary and secondary education. Some of this is profit that goes into the pockets of private school operators, but some is a reduction in pressure on the public sector to spend even more on public education. Former ministry officials the review team interviewed also claimed that parents’ tuition contributions increase parent commitment to their children’s schooling, which would imply a greater effectiveness per peso spent via tuition than through public subsidies – an indirect form of payment. No one has been able to show any evidence that increased parent contributions produce greater student achievement, but neither is there any evidence that tuition payments reduce student achievement.

From an efficiency standpoint, then, policy makers can argue that subsidising private schools has financial benefits in the form of lower costs per unit of student achievement and, more important, lower *public cost* of student achievement.

The bad news is that greater efficiency in non-religious private subsidised schools is associated with somewhat lower student achievement levels. Thus, efficiency in these schools is not generally achieved by increasing student achievement per hour of instruction, which is what one would like to use as a model of moving toward more student learning. Rather, private subsidised schools tend to achieve greater efficiency by lowering labour costs – teachers in Chilean private schools, almost everyone agrees, are paid less per hour and have fewer benefits than teachers in public schools. For some, this is a real efficiency

measure because they would contend that teachers in public schools earn too high salaries, receive too many benefits, and do not expend enough effort.<sup>70</sup>

However, if all teachers in the education system were paid as in private subsidised schools and had to face the same level of job insecurity for their entire career without the option of switching to a higher paying, stable, public school job, it would be much more difficult to recruit young people into the teaching profession. This would run counter to Ministry policies of raising teacher salaries substantially in the late 1990s in order to recruit “better quality” university applicants into teaching. Although the private school sector claims that graduates of teacher training colleges prefer to work in subsidised private schools, this does not accord with what teacher education students told the review team. Furthermore, at least under the two-shift school day, which is rapidly disappearing as schools change over to full day, private schools were able to hire public school teachers on a part-time basis as “moonlighters”. This practice is slowly ending, eliminating one source of cost reduction in private schools.

Thus, private subsidised schools may be more efficient than municipal schools, but not in a way that can be transferred successfully to the Chilean education system as a whole. In the longer run, teaching can improve only if more able young people are recruited into a profession with relative stability and a career ladder (not meaning a career based on seniority, but rather on performance effectiveness). Private subsidised education as it functions now cannot be delivered at lower cost per pupil and also be the main source for attracting higher quality secondary school graduates into a long-term, reasonably-well paid teaching career.

### **Do achievement-based teacher pay incentives raise student achievement?**

The *Sistema Nacional de Evaluación de Desempeño de los Establecimientos Educacionales Subvencionados* (SNED) provides merit

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Indeed, the review team visited a public multi-grade rural school in southern Chile that was highly inefficient, with only 14 students performing far below their capacity because their relatively well paid, experienced teacher set low expectations and got low results. The team also visited a nearby private subsidised multi-grade school that was probably more efficient, since it had 22 students and two teachers (one full time and one part time), with higher test scores. Yet, the team also visited rather high cost, selective private subsidised urban schools that did not seem to do as well per peso expenditure as municipal schools visited, where teachers worked just as hard or harder with a less select group of students.

awards to all teachers in a school based largely on student outcomes. The awards are based on a school's performance as measured by an index comprised of six factors:

- Effectiveness, including SIMCE average for language and mathematics (37%).
- Improvement, including SIMCE differential average for language and mathematics (28%).
- Initiative, including indicators in terms of the capacity shown by the school to adopt educational innovations, and its ability to enlist the commitment of external actors to educational activities, as development of regular, technical pedagogical group activities among teachers and existence of an Institutional Educational Project (6% – indicators are reviewed and modified before each SNED application in terms of the new policies that the Ministry is promoting).
- Enhanced Working Conditions and Adequate School Operation, including the school rating based on an inspection system (2%).
- Equality of Opportunity, including indicators relative to the students access to and permanence in the educational system, and the integration of children with special needs, as students' approval rate, students' retention rate, differential groups in operation, absence of discriminatory practices to students and absence of inappropriate punitive measures to students (22%).
- Integration and Participation of teachers, parents and guardians, including indicators as creation of a parents' and guardians' associations, use of SIMCE and SNED results and the perception parents have of the school (5%).

An important aspect of the SNED system is that it establishes competition between schools that are roughly comparable in terms of the student populations they serve, the socio-economic levels of the communities in which they are located, and other external factors that affect student outcomes, using cluster analysis. This method is applied separately for each region and for four categories: urban basic, rural basic, urban secondary and rural secondary schools (with or without basic education). SNED ranks schools within each group according to their scores on the index and gives awards to schools in rank order, up to the point where the enrolment in the winning schools accounts for 25% of the enrolment in that group. Award funds distributed to the selected

school can be used only for bonuses for teachers (including head teachers or school directors). Ninety percent of the funds are distributed on the basis of the number of hours a teacher worked in the school and the remaining 10% can be distributed to the teachers who have made the most “outstanding” contribution to professional performance. Winning schools are identified every two years.

According to Mizala and Romaguera (2001), a majority of teachers agree that a system of premiums based on teacher performance makes sense. This implies, they argue, that teacher resistance to incentive pay has declined and that the teacher corps is ready to accept some sort of pay variation based on teachers’ ability to improve student performance.

Besides the results of teacher interviews that ask their opinion of the SNED (Mizala and Romaguera, 2001), there exists no statistical analysis of the impact of the SNED on student performance. Since SNED is a relatively expensive programme aimed at increasing student learning, some attempt should be made to evaluate it. After more than six years of implementation, it would be useful to know whether teacher pay incentives in Chile are contributing to better teaching and better student results.

It is difficult for the review team to make recommendations for the Ministry related to the SNED. The review team realises that politically it is risky to delete a pay premium for teachers if the schools and the teaching corps have come to expect a premium. Teachers may now consider the SNED as part of their pay scheme, particularly if there is a certain random element as to which 25% of schools receive the SNED in any given year. However, the review team does consider that the Ministry should undertake some serious study of the SNED and its actual effects on student outcomes.

## **Conclusions and recommendations**

Chile’s educational system has been remarkable in its experimentation with various incentive schemes aimed at improving student learning. The underlying theory for these experiments is that market mechanisms, mainly tying teacher pay and employment to schools’ ability to attract students and to increase test scores on a national test, will increase the effectiveness and efficiency of the educational process. The theory argues that parents will choose better performing schools – those that are more likely to teach their children more in each grade – and that schools will organise themselves to be better performers in order to attract students and gain pay premiums.

These are interesting experiments, and it appears that, aside from a tendency toward greater inequality in the socio-economic distribution of



students among schools, recognised by the Chilean government when it became democratic again in 1990, Chile's students, on average, have not become academically worse off as a result of market incentives. The Chilean government may also be paying less for educational delivery than it would have otherwise, mainly by successfully shifting the costs of education directly to families and paying somewhat lower salaries to younger teachers (who work in private subsidised schools). Some would argue that this is preferable to increasing taxes, and, indeed, since collecting taxes is costly in a country such as Chile, it may be more efficient to fund education partially through direct tuition.

Nevertheless, it is also clear that the educational market experiment has produced neither the achievement gains nor the cost savings envisaged by its supporters. It is difficult to say what Chilean primary and secondary education would be like had it continued to be 75-80% publicly run and had the compensatory policies of the 1990s also been implemented. The best guess is that it would have produced almost identical student outcomes and would have cost about the same.

The review team cannot help but conclude that relying on market mechanisms (*e.g.*, competition among schools and pay incentives for teachers) in the future to produce greater effectiveness and efficiency in the educational system is not a high yield strategy. If anything, the Chilean experiment reveals that the connection between prices and output (and quality of output) are much more complex in education than in the production of other goods. The experiment also reveals that private management of education does little to improve the connection between price and quality.

The review team therefore recommends that the Ministry of Education:

- Put increased emphasis on improving teacher capacity and instructional supervision – *i.e.*, focus on direct labour quality and organisational improvements as a main element in a strategy for increasing student performance (see also the chapter on teacher education in this report).
- Conduct research on the impact of SNED and other programmes on student outcomes.
- Improve its method of evaluating student outcomes, so that student performance data are more useful for management decisions (see also the chapter on evaluation in this report). The current method of national testing, while useful for some purposes, is not accurate for

assessing the value-added in each classroom and each school. A better evaluation system would allow municipalities and the Ministry to identify schools and teachers that are doing consistently well with their students and consistently poorly. Without this information, there can be no checks and balances in the educational system.



## *Chapter 5*

### **SECONDARY EDUCATION**

This chapter focuses on the secondary education system and the reform achievements in this sector and deals with secondary vocational education, including the situation prior to reforms, reform initiatives to improve work skills and key features of these reforms. It describes enrolment, expenditure and the performance of vocational schools and the system. Key issues such as maintaining relevance, improving quality and measuring success are discussed. Higher technical education is also described.

#### **Introduction**

The Chilean government began the 1990s with a secondary school system that had grown rapidly in the 1980s, reaching almost 80% of the age cohort, and, up to 1988, heavily weighted to traditional academic education preparing young people for university. Beginning in 1988, before the democratic government actually came to power but when it was already clear that the transition from military to democratic rule would take place, a major shift began in secondary education. Enrolments shrank rapidly in the traditional scientific-humanistic stream and expanded sharply in the professional-technical stream. All the enrolment growth in secondary education in the 1990s was in professional-technical education (see Table 7).

The rationale for this shift was that the overall quality of graduates from secondary schools was generally poor and that students trained in the scientific-humanistic stream were not prepared appropriately to enter the labour market with concrete skills that they could apply to jobs. In addition, dropout rates in secondary education were high. The government reasoned that if secondary education was to continue to expand and successfully retain students to completion, schooling would have to be much more “appropriate” for the “new,” lower socio-economic background population of young people going on to this level. The technical-professional stream would serve that function. Finally, a more implicit aim of the shift to the professional-technical stream was to reduce the pressure to expand university education, where enrolments were growing rapidly but which the government was not prepared to subsidise to the extent necessary to incorporate the large planned increase in graduates from secondary education. Thus, the major policy thrust of the democratic

government was to make secondary school completion universal, preparing a much better educated labour force for Chilean agriculture, industry, and services, but to do so in such a way that would not create too much pressure on university expansion, especially university expansion requiring a large increase in government financial support. Indeed, even as basic and secondary spending per student rose greatly in the 1990s, government spending per student on higher education rose only about 5% in real terms, from CLP 525 000 year 2000 in 1991 to CLP 550 000 in 2000 (both values in CLP of year 2000).

**Table 7. Secondary education enrolments by type 1981-2001**

Year	Total Number of Students	Percentage of 14 –17 year-olds	Number Scientific Humanistic Stream	Percentage of Total	Number Professional-Technical Stream	Percentage of Total
1981	554 749	65 (*)	392 940	70.8	161 809	29.2
1993	652 815	76	319 457	60.0	261 358	40.0
1996	739 316	81	415 919	56.3	323 397	43.7
2001	850 713	85	474 641	55.8	376 072	44.2

*Source:* Ministry of Education, 2003. Selected years are the only relevant ones for the comparison of enrolments in general and vocational education, due to changes in institutional definition of number of grades corresponding to the professional-technical stream. (\*) Coverage 1982.

The initial thrust of secondary education reform in the 1990s, therefore, was to continue to expand the technical-professional stream and keep enrolments in the scientific-humanistic stream approximately constant; in addition, the democratic government increased spending per student in both basic and secondary education steadily throughout the 1990s, but expanded spending per student more rapidly in the technical-professional stream than in any other part of the educational system.

Later in the decade, the government implemented a major curriculum reform in secondary education. The government increased public expenditure on secondary education more than threefold in real terms, from CLP 94 million (measured in 2000 prices) in 1990 to CLP 308 million in 2000. Part of this increase helped fund the continued expansion in secondary school enrolments from 719 819 in 1990 to 850 713 in 2001. But the largest part of the higher public spending went to increased teacher salaries, which resulted in an increase in total costs in 1990-2000 from CLP (2000) 117 000 to 300 000 per student in the scientific-humanistic stream and from CLP 152 000 to 424 000 in the technical-professional stream (see Figure 1). The increased expenditure could not, however, overcome the relative educational disadvantages of Chileans from lower socio-economic backgrounds.

The distribution of students between the academic and vocational streams saw the poor under-represented in the academic stream and over represented in the vocational stream. Dropout rates among lower socio-economic background students in secondary education continued to be far higher than for students from higher socio-economic backgrounds, and the rate of attending university even among those students completing secondary education was far greater for higher socio-economic background students than for those with less advantages at home.

The review team was impressed with the enormous gains that Chile has made in incorporating its youth into secondary education and improving their completion rates. Curriculum reform and increased resources devoted to those students coming from disadvantaged backgrounds have gone far in helping achieve greater universality of secondary schooling. Since university education is also expanding, more students are not only completing secondary education but also going on to tertiary studies, many of these are first generation high school graduates from lower income families. This trend will undoubtedly continue. Nevertheless, the very success of the expansion is beginning to make the secondary education reform of only a decade ago partially anachronistic, working against the very goals of greater equality that inspired the reforms. The review team saw the need for new changes to offset these contradictions.

### **The reforms of the 1990s**

The government chose to approach the reform of secondary schools in three ways: first, it reshaped the secondary school curriculum so as to improve the relevance of both its academic and vocational offerings; second, it lengthened the school day, aiming to strengthen student performance; and third, it encompassed a major programme (MECE) of investment in learning materials (universal provision of textbooks, libraries, ICT) as well as support of pedagogical innovation to all subsidised schools – both municipal and private. There are also a variety of smaller initiatives aimed at strengthening educational quality and increasing access for disadvantaged students.

This third programme, *Programa de Mejoramiento de Calidad y la Equidad de la Educación* (MECE), which was intended to improve various aspects of quality and improve student access was partially funded (17%) by a World Bank loan. The funds made available under this programme were used *inter alia* to make up for deficiencies in school libraries, information technology, in-service training for teachers and technical services.

In the curriculum reforms, the major issues that had to be readdressed were the content of and the relationship between the academic and vocational

curricula of the secondary programmes. Finding satisfactory answers to these questions would not only have major impacts on the day to day work of secondary schools but also would have substantial effects on the quality of graduates destined for the universities, for higher technical education, and for direct entry to the work force.

Attacking the structure of the existing secondary education system meant that reformers first had to confront the reality of an existing secondary system that had been constructed on a commitment to the separation of academic and vocational education. This commitment was expressed in two ways: firstly, through the physical separation of the two streams by locating them in separate schools and secondly, through the substantially different curricula studied across the full four years by the students of the two streams.

As in many of its reforms, the government approached the structural divide in secondary education by preserving that which was too difficult to alter readily while still confronting the key issues by other means. The primary decision they made therefore about the shape of secondary education in Chile was to preserve the structural distinction between academic and vocational secondary schools, while introducing a profound restructuring of the total curriculum for both streams of the system.

The affirmation of the structural separation of the two streams was a pragmatic decision given that the separate existing infrastructure could not have been abandoned without substantial financial cost. The remaking of the curriculum was far from being a minor tinkering with the existing curriculum. It changed profoundly the content and the relationship of the curricula of the two streams.

Under the new curriculum all students in the first two years of their secondary schooling in Chile would be required to study a common curriculum; in the second two years, they would have common studies in Spanish, mathematics, history, social sciences and a foreign language, while the balance of the curriculum would be divided into separate specialist studies for students in the academic stream and in one of forty-six occupations for students in vocational schools. The split of hours among the three streams meant that students over the four years of secondary schooling would spend 54% of their study time on general education, 31% on their specialisations and 15% on electives.

The total impact of the reforms in secondary education, backed by substantial increases in funding per student, has been to transform secondary schools by restructuring the four years of the curriculum, increasing the length

of the school day, improving the quality of teaching, reducing failure and dropout rates, increasing substantially the numbers of students, improving the infrastructure, providing new and improved teaching and learning resources, identifying clearer curriculum objectives and establishing higher standards for satisfactory performance.

These changes have been capped off by a reform of the Chilean Constitution, unanimously approved in 2003, extending compulsory schooling for all students to twelve years, which will bring even greater numbers of children into the secondary schools. It is most likely that these additional enrolments will have a strong impact on the vocational high schools, thus releasing even more graduates of these schools into the work force or into tertiary institutions.

### **Reform achievements in the secondary school system**

As indicated previously, the World Bank provided a loan to help achieve some of the quality and equity targets of its secondary reforms. The review undertaken by the Bank in 2001 of the programme outcomes revealed that: in the period under review, secondary schools increased their enrolments and reduced their rates of repeats and dropouts. While the improvements were substantial, the Bank pointed out that:

*...less (sic) than half the students entering secondary education will complete the cycle in four years. This situation is more acute within families belonging to the lowest income quintile and with students attending municipal schools. In private paid schools, 75% of students entering first grade will complete the secondary education cycle in 4 years. About 40% of first graders in municipal secondary schools will never complete the cycle, compared with 23.4% private subsidised schools and 10.6% in private paid ones.*

The Bank also had a positive view of the new curriculum:

*The revised secondary school curriculum includes a more appropriate fit with the future needs of society and has radically modified the traditional frontal, and mostly ineffective, teaching methods.<sup>71</sup>*

In a study of public views of the impact of the education reforms of the 1990s carried out by the *Centro de Investigación y Desarrollo de la Educación* in 2001 and expanded by a survey undertaken by the Ministry of Education in

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<sup>71</sup> World Bank (2001), p. 5.



2003, the overall perceptions of the impact of the reforms on secondary education supported the conclusions of the World Bank on the effectiveness of the reform programme it had supported. There are, however, caveats provided by the same surveys to these positive views. For example, the public still (and correctly) sees different schools serving different populations, with private schools serving students from higher income backgrounds and municipal schools serving students from lower income families. The significance of this perception is underlined by another (and incorrect) view that students in the municipal schools receive the poorest quality education in the school system.

## **Summary**

A decade of reform has seen a transformation of the secondary school system in Chile. In general the reforms have led to substantial improvements in most aspects of secondary schooling. The future directions of government policy seem to be pointed towards remedying those deficits that still exist, though solving all of them, even for a government so strongly committed to educational improvement, has to be placed in a context of strong competition for available funds.

Within the context of the continuing growth and development of the Chilean economy and its anticipated demand for new and more sophisticated skills and increased productivity, the lingering doubts about the performance of the vocational secondary schools, which carry the burden of the preparation of the technician level in the Chilean work force, is an issue of special concern.

The review team observed classes in a number of secondary schools, and found them to be implementing the reformed curriculum, although some students suggested that their teachers had had difficulties in the past two years adjusting to the change. Some general secondary students also expressed the fear that they would be penalised because of upcoming changes in the college entrance examination, which will be more closely tied to the new curriculum.

These problems should solve themselves as teachers become more versed in the reformed frameworks and students have experienced the new examination. Of more concern to the review team is the overall level of secondary school teaching, and the preparation of new secondary school teachers – concerns that were discussed in Chapter 2 of this report.

A less understood problem in the current strategy of expanding enrolment almost entirely in technical-professional secondary education, is the role that this kind of education and the curriculum reform of the 1990s play in restricting access to university education for brighter students from lower income families

with lower educational attainment expectations. One of the contradictions that Chile seems to face in trying to expand secondary education in a way that allegedly assists lower income, first generation secondary school students to complete this level may be to reduce the probability that these students attend university.

At the other end of the spectrum, Chile still faces high dropout rates from secondary education among students from lowest income families, despite some programmes such as *Liceo para Todos* (High School for All) organised to provide incentives to complete secondary schooling. These programmes may simply be too small to take on the size of the problem. As in other countries, high dropout rates in secondary school are largely the result of poor preparation of students in basic education. The scientific-humanistic stream of secondary education shares the underlying problems of the general quality of Chilean education, discussed in the other Chapters of this report. Even though the scientific-humanistic stream is selective, in the sense that students choosing this stream tend to see themselves as university bound and tend to have higher test scores and grades, many of the schools they attend provide much less than international level mathematics, language, or science courses, mainly because many, if not most, of their teachers do not have the capacity to teach at this level and the curriculum is less demanding than it could be.

However, the more specific problems of Chilean secondary education are located in the fast-growing vocational stream. The balance of this chapter is devoted, therefore, to a consideration of the impact of the reforms on secondary vocational education in Chile during the period under review and a discussion of some possible directions and priorities for further actions to make that part of the secondary school system more effective, efficient, and equitable.

## **Secondary vocational education in Chile**

### ***Improving the skills of the Chilean work force***

Changes to the vocational stream in the secondary schools have to be seen, as a part of the attempts by the government to improve the capacity and productivity of Chilean industry and to upgrade the quality of education.

Improving the performance of the vocational schools also has important social implications. As late as 1997, enrolment statistics for the municipal vocational schools show that they drew more than half their students from the two lowest quintiles in the community and only 25% of their students from the top two quintiles. The quality and success of these schools is a very significant issue for the disadvantaged.

The Chilean economy showed remarkably consistent growth during the fifteen years 1985-1999, with a resultant strong demand for skilled labour. Unemployment declined to 6.2% in 1998 though it increased again following the economic downturn of the late nineties.

It could have been anticipated that this growth would have brought with it a substantial demand for more highly skilled labour at the technician level as well as at the professional level with a resultant increase in the private rate of return for vocational qualifications.

This has not been the case possibly because of the particular dimensions of the Chilean economy. Unlike many developing economies, agriculture has been growing, the service sector has been in decline, the share of manufacturing held by the knowledge-based sector is comparatively low and high technology products account for only 5% of total exports (Hansen *et al*, 2002). The overall impression is that much of the manufacturing sector, where there should be significant demand for vocational graduates, is made up of small low-tech companies with a narrowly skilled, unqualified work force. This heavy reliance by industry on workplace experience as the primary means for developing its skilled labour makes it very important that this form of training is acknowledged as an important component of skills development.

### ***Reform initiatives for improving work skills***

Aware of the importance of developing an appropriately skilled work force capable of meeting the challenges of globalisation, the need to diversify the economic base and the current deficiencies in the contributions of the various partners to the stock of available work skills, the Chilean government has sought and gained the support of the World Bank for a major initiative to improve the skills of the Chilean work force through a lifelong education and training programme, *Programa de Educación y Capacitación Permanente*.

This programme, also known as *Chile Califica* (Chile Qualifies), has as its objective “the foundation of an articulated lifetime learning and training system with the participation of the private sector (employers and workers).” The project has four components: providing new opportunities for lifelong learning and training; improving the quality; increasing the coverage of technical-professional education; and establishing instruments to support the provision of a lifelong and training service; and institutional strengthening. (World Bank (2002), Lifelong Learning and Training Project, Chile Appraisal Document).

One target of these reforms is the current deficit of 500 000 illiterate adults, 6.5 million adults with incomplete secondary education and about 5.5 million workers in need of further training of appropriate quality and relevance.

Small and medium sized companies in particular need help to upgrade the education and skills of their work forces; particularly, in improving their basic literacy and numeracy. While in some firms it is possible to provide systematic workplace training, often the size of the business and its inability to shut down even for short periods precludes workplace training even when such training is in the firm's long term interests.

The issue, though, is not to replace workplace training, which often is the most effective form of training, or reduce its significance but to encourage the growth in its variety and quality and in particular, to encourage the recognition of its outputs by educational institutions.

It is important therefore that relevant upgrading and upskilling programmes be made available for existing workers outside normal work hours so that they have the opportunity to improve their skills. This can be done through vocational schools that are properly equipped and staffed to deliver such programmes. The expensive assets of the vocational schools should not be allowed to remain unused for much of the year.

Providing facilities is not enough, there must be incentives for workers to spend their free time in acquiring new skills and qualifications. The primary incentive should be the increased wages that flow from the gaining of these additional skills and qualifications; unfortunately, there is little evidence that Chilean industry is prepared to recognise qualifications, except those provided by universities.

As a means of encouraging employers' commitment to providing greater training opportunities for existing workers, the government allows a tax incentive of 1% of a company's payroll to be used by employers for the training of their staff in both on and off the job programmes. An interesting feature of this policy is that the money may be used for improving the general education of adult workers with low levels of literacy.

It should be noted that such tax incentives can be misused for inappropriate training and that companies can use these benefits simply to pay for what they were doing already rather than expanding training opportunities. The efficient administration of such a scheme becomes very important if there is to be a net growth of training obtained from the tax forgone under this programme.

## Vocational education in the secondary schools prior to the reforms

Prior to the reforms of the nineties, the four years of secondary education were divided into two parallel streams: vocational education (*Educación Media Técnico-Profesional*) and general education (*Educación Media Humanista-Científica*). In most instances this educational separation was reflected by the physical separation of the two streams into separate institutions, though there were some small schools that delivered both programmes.

The decentralisation of school education in the 1980s split the vocational high schools into three groups: the completely publicly funded schools that were now managed by the municipalities; the subsidised schools that were managed privately but received government subsidies and a group of schools that also received government subsidies but were now administered by corporations (chambers of commerce/industry).

At present there are nineteen corporations operating seventy secondary vocational schools in a limited range of industrial fields, with 63% of the schools offering programmes in either “commerce” or “industry”. The largest number of schools controlled by a single corporation is eleven, while seven corporations have only one school under their management.

Of equal importance to this restructuring and change in management was the move away from the obligation of the schools to deliver centrally set curricula devised by the Ministry of Education. Each vocational school was given the right to determine which vocational programmes it would offer and develop its own curricula to support those offerings.

This freedom in curriculum decisions was a reflection of the view that such decisions are best taken at the local level. In the case of vocational schools it was assumed that this would enable them to be more responsive to the occupational skills needs of their local communities.

Such a change in responsibility for curriculum development was of course consistent also with what was to become a prevailing view in many countries; namely, that teachers’ roles should change so that they became responsible not only for teaching but also for the development of the curricula that they delivered.

In vocational education this switch away from central curriculum inputs has generally been matched by a new focus on the setting and certification of outputs through the development and regulation by industry of the occupational standards that are used by the schools.

In discussions with practitioners of the system, the team was presented with the view that, in the case of Chile, the decentralisation of vocational curricula failed to produce the hoped-for results. Apparently in this new and heady environment, the schools embarked on what was a pseudo-expansion of their educational offerings. The schools ended up offering 400 separate occupational programmes. At first glance this appeared to be an appropriate response to their newfound independence but it turned out that the variations among their new offerings were more often than not explained by confused and confusing nomenclature rather than any real occupational differences. There was little real innovation to be found despite the newly found freedom.

There are various explanations offered for the failure of this experiment in curriculum decentralisation. The most likely being that the change in control of the curriculum failed to take into account two important barriers to successful curriculum development and implementation: firstly, given the size of these institutions and the deficiencies in the training of the teachers, schools did not have the skills base either to analyse training needs or develop new curricula; secondly, they did not have the flexibility or the funds for the specialised equipment, facilities and new teaching staff needed to alter their offerings. Individual schools were thus trapped within their existing curriculum frameworks with neither the skills nor the resources to move outside their existing boundaries.

The new government located its reforms of vocational secondary education within the framework of its overall reforms of secondary education. It had to come to grips not only with the failure of the decentralisation of curriculum development but also the broader question of the appropriate relationship between the academic and vocational curricula in the schools.

These reforms would also have to take place in a system that was poorly equipped in both technical and general resources, had a significant number of untrained and unqualified teachers and whose management at the local level was struggling to cope.

It was clear that in order to have any major impact on the problems bedevilling the system, industry had to be convinced that the reform agenda was serious and that it would be allowed to make a significant contribution to the shape of the reforms. At the heart of this matter lay the fundamental question as to what was to be taught in the secondary vocational schools both in its technical aspects and its general curriculum.

The answer to this question had to take into account the fact that the vocational schools would continue to attract a significant number of students

who were capable of gaining entry to universities. The vocational school system would have to permit options beyond job market preparation, not create barriers to students if they decided that they wished to proceed to university.

### **Key features of the reforms in vocational education**

The most radical change in the new arrangements for technical-professional secondary education was the restructuring of the four years of schooling to allow for two common years of study for all secondary schools students, with the curriculum being split into general and vocational streams only in the final two years of schooling.

This new approach to the curriculum in secondary vocational schools is based on the proposition that students entering vocational high schools need a sound general education as the basis for their future vocational studies. It also concedes that they should not be forced to make their vocational choices at the start of their secondary schooling.

Under the new regime, all vocational graduates are expected to emerge with a sound general education in language, science, mathematics and history; key competencies in communications, English and IT and the necessary skills and knowledge required in their chosen occupations. Their values and personal development will also have been catered for during the four years of their studies. Their studies are supplemented by actual work experience during their high school education and in the year after completing their studies.

This move to provide all vocational students with a sounder general education is in line with the awareness of the increasing short lifespan of many specific vocational skills and related knowledge and the need therefore to provide students with a sound educational base so that they have the capacity to continue learning throughout their working life.

The new structure for vocational programmes falls into two parts: the general framework which is compulsory and the individual occupational programmes which are provided by the Department, though there is provision for flexibility in their implementation. At the local level a school may fine tune a programme by introducing its own locally specific modules, add new objectives and vary the times allocated to parts of the programme. It is also possible for a school to propose a vocational programme of its own, though this has to be approved by the regional education authorities.

The reduction in technical studies from four to two years as part of the new curriculum structure was not as drastic a reduction in vocational studies as it

might seem. The expansion of the school week from thirty eight to forty two hours ensured that the actual reduction in the vocational aspects of the curriculum was in the order of 15%.

The reforms did lead to a substantial reduction in the number of occupations being taught in the vocational schools, from some 400 to 46, mainly through the elimination of pseudo-studies. These new occupations were grouped into five broad “industry” classifications: commercial, industrial, technical, agriculture and fisheries, which were further divided into fourteen occupational areas and 46 specialisations.

**Table 8. Secondary professional-technical education enrolments by occupational area, 2001**

Occupational Area	Enrolments	Percentages
- <i>Commercial</i>	161 360	42.9
- <i>Industrial</i>	126 721	33.6
1. Metalworking		
2. Electricity		
3. Chemicals		
4. Construction		
5. Logging		
6. Mining		
7. Graphics		
- <i>Technical</i>	59 871	15.9
1. Food technician		
2. Garment industry		
3. Social projects and Programmes		
4. Hotels and Tourism		
5. Graphics (drafting)		
- <i>Agriculture</i>	21 315	5.6
1. Forestry		
2. Farming and cattle raising		
- <i>Fisheries</i>	6 805	1.8
<b>TOTAL</b>	<b>376 072</b>	<b>100.0</b>

Source: Mideplan, Situación de la Educación en Chile. Informe Ejecutivo Año 2000. Gráfico 7.

The forty-six occupations selected from these broad families have been selected by industry as providing a reasonable range of choices for the current situation of the Chilean economy. The development of the new curriculum saw industry heavily involved in ensuring that there was an appropriate spread of programmes on offer and that the occupational profiles and corresponding competencies were developed on a systematic basis rather than from instinct.

The implementation of the new curriculum arrangements went comparatively smoothly. As a result of the flexible approach taken to its



introduction, schools were allowed to continue with the old structure for up to two years beyond the official starting date, teachers were retrained where their specialties became redundant, though most schools were able to fit within the new programmes.

The reduction in the occupations being offered by the schools did not see a major move away from the broad industry areas that had been on offer under the decentralised system. The schools are still confined to offering programmes within the main job families that they catered for in the previous system. The essential differences are that the profusion of pseudo-occupations has disappeared and that the skills now being taught reflect real job profiles.

While the new occupations on offer reflect the real job opportunities available they also reflect the difficulty of changing in the short or even medium term the general directions of a vocational education system. It is difficult enough to redraw curriculum so that it more accurately reflects real occupations; it is even more difficult to replace teachers, buildings and equipment to reflect any major shifts in offerings.

One hundred and fifty of the vocational high schools introduced the German dual system of training (apprenticeship) with the assistance of the German Agency for Technical Co-operation (GTZ) during the period 1992 to 2002.

The dual arrangement ensures that the students involved not only have continuous contact with their employers, for two days of each week during the four years but also that they have a potential long term job waiting for them at the end of their extended period of practical work, between 300 and 500 hours, in the year after their completion of secondary school.

### **Enrolments, expenditure and school performance**

Professional-technical enrolments in Chilean high schools over the last decade have grown substantially in absolute numbers, from 255 000 in 1990 to 376 072 in 2001 and as a share of all secondary enrolments in the same period from 35% to 44%. More significantly there has been a substantial improvement in pass and dropout rates in this same period with pass rates increasing from 80.1% to 89.6% and dropout rates declining from 7.6% to 4.3% (Ministry of Education, 2003). Nevertheless, these dropout numbers may not reflect a reality in which only about 70% of secondary school students from lower income families manage to complete their secondary education – since a high fraction of such students are in municipal vocational schools, this is where the survival rate is lowest, and desertion the highest. Chile shares this problem with many

other countries, including developed countries, where secondary school dropouts constitute a serious future liability in societies where most young people graduate and many go on to post-secondary education.

While the general view of secondary vocational education is that it is usually populated by the academically poorer performing students in the secondary schools is correct, this is obviously not true for a number of vocational schools. The team visited one secondary vocational school where the students performed very well academically, which is not surprising given that for the last ten years there have been almost ten applicants for every new place. In another older vocational school in a metropolitan setting, there was again substantial competition for places, mainly from girls, with a not surprising high level of academic achievement.

It would be unrealistic, however, not to recognise that the preponderance of vocational education institutions are catering primarily for the poorer performing students and that they are perceived by many as the refuge for those students who have little chance of entering a university.

This image is reinforced by the inadequate facilities that still exist in many schools despite increased resources being made available to the system as a whole. It is further reinforced by the inadequate backgrounds and training of many of the teachers.

It turns out that both highly select vocational schools and those educating students at the “bottom” of the social-academic structure represent problems for the Chilean education system. In the first case, the average secondary school test scores of students in the select vocational schools suggest that they should be given a much more heavily academic curriculum than they currently receive, since most, and in the near future, essentially all, will take the university entrance examination and intend to attend university. Yet, these very bright students take mainly vocational courses and are short changed on the academic preparation in the sciences, mathematics, and language needed to do well on the university entrance test. Even though many do reasonably well on the test anyway, there is little doubt that they would do even better were they to have more academic courses in their last two years of secondary school. Many, if not most, attend select vocational schools because of their social class – their parents’ experiences make selection into one of these schools the logical route to a good technical job, when, in fact the income payoff to such jobs is much lower than for jobs associated with university completion. For example, the team visited selective private subsidised and municipal schools of the scientific-humanistic stream where students averaged lower on the grade 10 SIMCE test but all went on to university, whereas only about 40 to 50% of students in

selective vocational stream schools end up attending university. True, part of that difference is economic, but part must also be due to the fact that highly selective technical-professional secondary schools cater to class-based conceptions of the labour market, and the government has not taken steps to inform parents or reshape the vision that these lower to middle income students have of their social and work possibilities.

At the other end of the vocational stream, the main problem is the quality of education received by students, their spotty attendance at school, the social conditions they face at home, and the limited programmes available to improve their possibility of catching up and completing secondary school. Much more needs to be done in the form of incentives to families and schools to remediate the gap and increase attainment.

### **Performance of the system**

The employment records of graduates from the vocational schools are not encouraging. A study undertaken in 1999 revealed that only 44% of vocational school graduates were employed in the occupation they studied at school. On its own, this statistic is not sufficient to damn the schools as it may disguise a range of other good options taken by graduates but it is highly indicative of problems with the relevance of the system.

In visits to schools, the team noted that there were substantial variations in the employment success of school graduates even within the one school. The information on graduate employment rates often appeared to be anecdotal, though some schools had maintained thorough records. In fairness, it should be noted that the schools are neither staffed nor equipped to maintain detailed graduate destination statistics.

The danger with establishing country-wide vocational courses is that despite the best of advice there will be problems in some regions and in some occupations finding sufficient jobs for graduates. Though this problem may be seasonal or related to the business cycle, it may be that the employment market has changed even as the programme was being devised. It is important therefore that there be regular if not frequent assessment of graduate employment success.

In an appraisal document on the *Chile Califica* project produced for the World Bank in 2002, the Bank acknowledged the success of the educational reforms in improving graduation rates and reducing dropout rates, but pointed out that in the last eleven years some 140 000 students had dropped out of secondary education of whom about 40% belonged to the lower income

quartile. Many of these students would have come from the vocational school system despite its improving retention rate over this period.

The Bank argued further that according to the old SIMCE results, the vocational school system had a major quality issue, the explanations for which lay in the poor quality and obsolescence of much of its infrastructure and equipment and in the quality of its teaching. The Bank claimed that these deficiencies had had a negative impact on the delivery of the curricula initiatives that have flowed from the reforms.<sup>72</sup>

A survey of schools undertaken by the Ministry in 2001 revealed that 64% of the 231 schools surveyed believed that the introduction of the reformed curricula had been delivered well, while 31% believed that its delivery had been satisfactory and only 5% believed that the delivery had been poor.

It is of note that these overall figures hide major regional differences, with all the schools in two regions believing the implementation had been good, while in two other regions less than half the schools saw the implementation positively.

The observations made by the team supported the proposition that the implementation of the new curricula would have been very difficult for some of the schools given their shortages of space and equipment and their large class sizes.

The notion that the creation of the new curricula would lead to more inventive teaching that got away from the stereotyped delivery of separate theory and training lessons, let alone led to a better integration of the enlarged general education stream, must seem very distant for those teachers faced with inadequate resources, facilities and support. It needs to be remembered, however, that most schools are far better resourced than they were not that long ago.

### **Some key issues facing vocational education**

The progress towards a satisfactory system of vocational education in Chile is well underway and it appears pointed in an appropriate direction. The search for a robust system of vocational preparation for school students is an old one and there have been and there still are many faltering attempts to find the perfect system.

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<sup>72</sup>

World Bank (2002).

The reformers of Chilean vocational education are to be congratulated that their reform programme is an excellent example based on the realities of the environment that it occupies. One of these realities is that Chilean vocational education is imbedded in an environment that does not value manual skills, at least when they are applied by somebody who has not received a higher education.

Whereas the team agrees that shifting strongly toward vocational secondary education in the late 1980s and in the 1990s may have been appropriate at the time, there are some serious issues in the new century with putting so much emphasis on vocational education at the secondary level. As post-secondary education appropriately expands to include an ever-larger proportion of the age group, streaming academically competent youth into vocational education mainly because poorly informed families choose that option needs to be reconsidered, particularly by a progressive government intent on improving opportunities for youth from the bottom half of the income distribution. In addition, there are other problems with vocational education (and with the quality of much of the scientific-humanistic stream) that need attention. When a high percentage of vocational graduates do not gain employment in the occupation they studied in school, this suggests that an important role of vocational training is to engage students sufficiently to keep them in secondary school to completion rather than teaching them the specific skills they need to get a job. With these considerations in mind, the team suggests that in continuing to reform secondary education, planners should place special emphasis on three elements: maintaining relevance, improving quality and measuring performance.

### ***Maintaining relevance***

The key to the success of secondary vocational education in Chile will be its capacity to maintain the relevance of its offerings.

The total overhaul of the curriculum structure and the creation of the new range of occupational offerings have provided the schools with a credible platform from which to jump into the future.

Maintaining the credibility created by the new offerings will not be easy. There will always be the pressure to leave well enough alone despite the evidence that offerings are becoming out of touch with the realities of the labour market. This pressure comes from concerns over the cost of change and the desire to avoid the difficulties created when teaching staff find themselves redundant.

Though the current range of offerings have been chosen carefully for their relevance to the real world of work and the job opportunities available to graduates, it is clear that this range of offerings will need to change to take account of changes in the composition of the work force. It is also clear that all of the offerings will need to be reviewed regularly to maintain their relevance.

The key to success in maintaining the relevance of offerings is to have the information that establishes whether or not graduates are gaining employment in their specialty and whether or not their employers find their skills appropriate.

This information can come from a variety of sources. The first is in an unstructured way through employer feed back to teachers in the schools. This feedback can be assisted by the creation of school councils that are made up substantially of relevant industry representatives. At present the system has too few such bodies. The second way is through the regular collection of data through appropriately designed and administered surveys.

### ***Improving quality***

The primary means of lifting quality in Chile's secondary schools will be through improving teacher quality and linking teacher education more tightly to the upgraded curriculum, much as in basic education. Secondary trained teachers specialise in mathematics, science, language, social studies, or other subjects. But as discussed in the chapter on teacher education, they are not necessarily trained well to *teach* those subjects at a high level. The team observed enormous variance in the quality of teaching in secondary schools, both in the scientific-humanistic stream and the technical-professional stream. The team also heard complaints from secondary school students about the knowledge that teachers had of the new curriculum. Time will solve some of these problems, but others will not be solved if the demands of the curriculum are greater than the capacity of teachers to deliver it adequately. In addition, in schools catering to lower income students, teachers have to be particularly strong in teaching mathematics, language, and science to move students through a demanding curriculum in a way that engages them and helps them "catch up", usually compensating for poor quality basic education and lack of support at home. Unfortunately, the schools attended by lower income students, as already pointed out, have fewer resources, not more, needed to accomplish these tasks, and teachers are not adequately prepared to teach students already behind. They have low expectations for their students, so it is not surprising that the students end up completing less than half the required curriculum.

Vocational schools have an additional issue in improving quality. Since many of their teachers specialise in vocational training, vocational schools need

a commitment from the Ministry to develop strict criteria in the employment of those teachers who will teach the vocational elements in the curriculum. These criteria must cover general and technical education qualifications, work experience, teaching qualifications, personal characteristics and skills. At the moment it is acknowledged that the schools are employing some vocational teachers who lack any substantial experience of the occupations they are teaching as well as having little or no experience of what it is like to work in the world at large. Since the overall issue of teaching quality has been dealt with in Chapter 2, above, the focus here is on the special problem of improving the quality of vocational teachers.

Attracting well-qualified and highly experienced workers into the ranks of vocational teachers is often difficult simply because schools do not have the funds to compete in the labour market. The competition is often made more difficult because the teachers that schools would hope to attract have not only the qualifications and experience sought by industry but also have attributes such as highly developed communication skills that make them even more highly sought-after by industry.

There is one other major problem in the employment of vocational teachers. If the schools are to meet the changing needs of the work force they will need to change with the times or they will again be declared irrelevant by industry and their students.

Many of the occupations currently being taught in Chilean schools will disappear over the next ten years or will have become so deskilled or modified that there will be no continuing demand for them. Even a number of the occupations that survive will be so changed that teachers currently employed teaching them will need major reskilling.

The schools will need to face the problem of coping with redundant teachers. The hope that all potentially redundant teachers can be retrained to teach other occupations is a forlorn one. The schools and the teachers involved will be far better off with a proper programme that accepts redundancy.

While there is general support among teachers for the new occupational profiles, there is criticism however of the lack of integration between the general and specialised aspects of the curriculum. This is a common problem as often those responsible for specifying the technical competencies of an occupation have difficulty relating them to the underpinning knowledge on which they rest and in particular have difficulty in locating them within a logical teaching framework.

In the case of the Chilean formulation of competence, it is argued that the definition of competence expressed in the Supreme Decree of Education Number 220/98 itself is a cause of the problem and that this same problem exists within the dual system.<sup>73</sup>

This discussion underlines the need for the development of appropriate teacher training programmes for vocational teachers. There is an overwhelming impression in the system that currently vocational school teachers are not well served by the teacher training programmes on offer. This is a problem not confined to Chile because most universities are neither staffed nor inclined to be sympathetic to the specific training needs of vocational teachers.

Most university staff in education faculties like many of their colleagues would never have seen the inside of a vocational school let alone worked in industry. Their intellectual interests would not normally encompass vocational learning and teaching and these prejudices are reinforced by the fact that vocational learning and teaching are not fields in which universities have shown a great research interest.

The team understands that as part of the *Chile Califica* programme, tenders will be called soon for the development of an appropriate training programme for vocational teachers. This is a positive step but it will need to be followed up by the selection of those universities that are to offer this programme. The allocation of the rights to deliver this programme provides a unique opportunity to develop some centres of expertise not only in vocational teaching but also in vocational education.

The number of universities chosen to deliver the teacher education programme should be small. Those universities chosen should be asked to commit resources that would provide the new centres with the means to establish themselves as centres for research as well as programme delivery. This initial funding should be matched by government and could be further supplemented by the awarding of contracts for research projects.

Even good teachers struggle to succeed in inadequate facilities, particularly in vocational programmes. While the team saw some schools that were well-housed and equipped to deliver quality vocational programmes, some of the schools visited were overcrowded, under-equipped and poorly designed.

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<sup>73</sup> Hidalgo and Remedio (2002).



These deficiencies have been recognised by the government. But the backlog is substantial and the development and equipping of vocational teaching facilities is a major cost burden even for advanced economies. The cost issue will be exacerbated by the need before long to develop new facilities as new occupations are added to those currently being taught.

The development of these new facilities should provide the system with the opportunity to try some new approaches. The first point to be considered is the size of the new facilities. There must be reasonable occupancy rates for such facilities if a project is to be viable.

This can be achieved in a number of ways. First, through the development of such facilities as “regional centres”, that is their drawing area should be set beyond the “normal” local boundaries. Second, through the opening of these facilities to use by industry outside school hours for training courses. Thirdly, through a design that produces flexible and multi- purpose spaces that can be programmed for constant use. In setting up these new centres, there should be a concerted attempt to gain corporate support either through management agreements or commitments to provide specific forms of support. There is one further approach that might be considered; namely, the leasing back of facilities developed by the private sector to government specifications.

### *Measuring success*

The secondary school system currently uses a number of measures to monitor the success of the system. These include student progress and dropout rates, academic performance by schools in key subjects, and absenteeism in schools. Such information is useful for a variety of ends not least in comparing the relative performance of academic schools and vocational schools.

These measures provide no clear evidence however of the performance of vocational schools in their primary task of turning out quality graduates who can find appropriate employment. The schools and their managers require therefore the regular systematic collection of data that can provide clear answers to the success of the system.

Income data from household surveys allow for some idea of the economic value of investing in schooling, and in particular, the economic value of the technical compared to the scientific-humanistic stream. Table 9 shows that the premium for technical education increased in the 1990s for both men and women from an insignificant amount to about a 10% premium. This estimate is based just on income differences and the income foregone by secondary school students. It does not include the higher public costs of technical education. But

it does suggest that in the 1990s, there was a premium to technical education compared to graduating from the scientific-humanistic stream of secondary school. For men, this premium rose simultaneously with a fall in the payoff to general secondary education. Of course, this only compares those who complete secondary school and do not go on to university or higher non-university education, and a higher percentage of graduates from general secondary schools than technical schools do go to university. It is also true that the payoff to university education is much higher than to either the secondary level or non-university post secondary education.

Table 9. Mincer<sup>74</sup> private rates of return education, by level and gender, 1987 and 1996 (%)

Level of Education	Chile Women		Chile Men	
	1987	1996	1987	1996
Secondary Complete compared to Basic Complete	47.2 (48.3)	54.0 (46.2)	67.8 (66.8)	52.3 (52.5)
Secondary Complete Compared to Secondary Incomplete	35.7 (37.3)	38.7 (34.5)	40.2 (40.9)	28.6 (34.4)
Technical-Prof Complete/Secondary Complete	1.0* (-4.3*)	11.6 (15.4)	6.4* (9.2*)	10.5 (12.5)
University Incomplete/ Secondary Complete	61.6 (66.4)	50.2 (50.2)	65.7 (83.8)	52.1 (50.9)
University Complete/ Secondary Complete	92.7 (91.6)	93.7 (97.6)	120.7 (124.8)	123.8 (132.0)
Superior Complete/ Secondary Complete	47.2 (48.3)	54.0 (46.2)	50.8 (52.2)	61.9 (54.0)

Source: CASEN, 1987 and 1996. Estimates by Paula Razquin, Stanford University.

Numbers in parentheses refer to the rates of return in metropolitan Santiago.

\* denotes that the figure is not statistically different from zero.

Other data would also be useful in assessing technical education, such as measures of employer satisfaction with school graduates, student satisfaction with their programmes and graduate destination data that includes information on graduate salaries. The cost of collecting this information regularly is high but it can be reduced by sampling and by piggy backing on other data collections.

In addition to this information, there should be regular data extracted on the costs of the system, particularly the cost of producing a graduate. These

<sup>74</sup>

Jacob Mincer, economist who devised a way to calculate rates of return from regression analysis. They are called Mincer rates of return.

costs should become part of a set of performance indicators agreed for the system.

The production of regular performance indicators should be useful in promoting improved management in the schools. This is not to say that the team was not impressed by many of the managers they met and by their grasp of their responsibilities. The team was impressed by some school leaders in particular because of their grasp of both the educational and management needs of their institutions. This integration of these two aspects of the leadership role showed itself in the educational quality and efficiency of their schools.

### **Higher technical education**

The *Chile Califica* programme attempts to change the current lack of articulation between secondary vocational education and the tertiary technical education system. In part it aims to use this improved articulation as a way of expanding tertiary technical education. The tertiary arms of the technical education system have languished in recent years despite the increased attractiveness to students of the secondary technical-professional stream. One reason that this may be true is that the payoff to higher, non-university education is less than half the payoff to university for men and about 60% of the payoff to university for women. In both cases, it is about the same as going to university but not completing (see Table 9).

The tertiary technical stream is composed of two sets of institutions; the *Centros de Formación Técnica* (CFTs) and the *Institutos Profesionales* (IPs). Some higher technical schools are operated by universities. The Technical Training Centres suffered a serious decline during the 1990s when their enrolments fell from 77 000 in 1990 to 50 000 in 1998, while the vocational stream in schools was increasing from 29 to 45% of secondary enrolments. A new target, however, has been set for the expansion of the CFTs from 60 000 to 120 000 students by 2010.

Why is the issue of the expansion of the technical tertiary institutions so important? The successful development of the Chilean economy, as it changes in response to external and internal pressures, may require the employment of more high level workers with “hard” as opposed to “soft” skills. As in many countries, the Chilean tertiary-trained workforce tends toward soft skills. Although employers at present seem to be more interested in university degrees (including soft skills), this may change.

Although this imbalance reflects social attitudes and preferences, one way of improving the quantity of high-level hard skills in Chile lies in increasing the

enrolments in the non-university technical institutions by better articulation between them and the secondary vocational schools. This movement could be accelerated by targeted financial incentives being offered to graduates of the vocational schools.

## **Conclusions**

The last 15 years have seen a continued expansion of enrolment and graduation from secondary education, accompanied by a major shift from general to vocational secondary education. This, along with a substantial reform of secondary school curriculum, seems to have been successful in incorporating lower-income youth into secondary education to levels among the highest in Latin America.

Chilean secondary schools have undergone a major change in curriculum over the period under review, a major change in vocational offerings, and some limited efforts to help students from low-income backgrounds succeed at this level of schooling. In general, these reforms have been positive moves to make the system more accessible to students and more relevant to employers. The implementation of the curriculum reforms still has not been completed, and secondary education still faces the same problems as basic education as far as the quality of training teachers receive, but in general, the expansionary phase of Chilean secondary education has been a considerable success.

Now that this phase is coming to an end, however, it is time to consider seriously further changes that focus on higher achieving students in vocational schools who may be short-changed in their academic preparation and hence, access to university, and on lower-achieving students, who need considerably more remedial education and an upgrading of the quality of basic skills they receive in their first two years.

In addition, it is important to provide students with vocational teachers who have been appropriately trained and that they will have available to them appropriate facilities containing all the essential equipment that they need. They cannot be sure either that they will be placed in classes of a size that will allow them to have sufficient access to the equipment provided even when it is up-to-date. Vocational schools will also have to develop new occupational offerings while cutting back or phasing out some existing offerings.

In sum, the Ministry needs, after this rapid expansion of secondary enrolment, to rethink the balance it has struck between vocational and general secondary education, how to solve a host of overhanging problems in the quality of the secondary education it is delivering, and a host of more traditional

problems associated with low income students in mass secondary education in developed and developing countries.

### **Recommendations**

- That highly selective vocational schools reconsider their status as “vocational schools” and rethink their course offerings and their vocational orientation.
- That the Ministry expand compensatory efforts in the first two years of secondary education.
- That the Ministry monitor the training of secondary teachers in core subjects so that their ability to teach the required curriculum in core subjects is sharply improved.
- That in planning the next range of offerings for the vocational schools consideration be given to locating them in facilities that could provide places for existing workers from industry.
- That the institutions that are licensed to deliver the new vocational teacher education programme be asked to commit themselves to the development of these facilities as key centres for the study of vocational teaching and learning.
- That the municipalities in consultation with the Ministry of Education and representatives from industry agree on a set of performance indicators for vocational schools.

## Chapter 6

### HIGHER EDUCATION

This chapter focuses on higher education, its historical development, policies in the 1990s, financing, growth and segmentation, quality assurance and describes supply and demand on the labour market for graduates. It deals with the efficiency of higher education as well as graduate education and research.

#### Introduction

Higher education in Chile has been growing steadily in the past twenty years and at an accelerated rate in the 1990s, from about 150 000 students enrolled in 1980 to 250 000 in 1990 to 480 000 in 2001. This growth is consistent with the perception, in Chile, for the need to increase the country's human capital, in order to face the challenges of the knowledge economy. It is also consistent with the worldwide trend to turn formerly elite into mass higher education systems, spreading the benefits associated with it. Gross coverage of higher education today (total enrolment compared with the population of age 18-24) is about 30%, compared with 15% in 1990. In spite of this extraordinary expansion, the private benefits associated with a higher education degree have also increased: according to some estimates, the annual rate of return for completing higher education went from 18.6 to 24.2% between 1980 and 2000, while the rates of return for both primary and secondary education declined.<sup>75</sup>

A comprehensive assessment of Chilean higher education policies over the last decade would exceed the terms of reference of this mission. Here, the

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The rates of return for primary education went from 7.6 to 4.1 in the period, and, for secondary education, from 18.6 to 9.7. These estimations are from the *Centro de Estudios Públicos*. Other estimates show that annual social rates of return (which include all private and public costs of schooling), to investment in completed university education rose between the mid-1980s to the mid-1990s from 18 to 21% for males and from 12 to 13% for females, whereas the annual social rate of return to investment to completed secondary education fell from 17 to 14% for males and from 13 to 11% for females (Carnoy *et. al.*, 2001). The rates of return for investing in university education in Chile are among the highest in Latin America.

review team will limit its observations to some of its more general features, having to do with issues of financing, access, equity, quality, and the role of higher education in improving Chile's overall human capital resources.

### **Historical development**

In the 1980s, under the military government, Chile went through the most radical reform ever attempted in a national higher education system in the region. The goals were to increase efficiency, by making it more responsive to market demands on its different segments; to reduce public expenditures in the sector, making the students and the private sector share a significant portion of its costs; and to increase its quality, through the association of the remaining public subsidies to quality assessment mechanisms. The main traits of reform in the 1980s (Brunner, 1995) were the following:

- **Diversification:** creation of a three-tier system (universities, professional institutes and centres for technical education), based on a hierarchy of degrees and duration of studies, with universities having the monopoly of graduate education and education for the “learned professions”.
- **Deregulation:** new, permissive legislation allowing for the creation of private institutions with very little or no regulation. Between 1980 and 1990, 40 new private universities, 78 private professional institutes, and 161 private centres for technical education were created.
- **Decentralisation:** the two old public universities (Universidad de Chile and Universidad Tecnológica) were subdivided into 16 new universities, including pedagogical ones.
- **Radical change in financing mechanisms.**

Three sources of resources were envisaged:

- **Direct subsidies,** limited to the eight universities that existed before the reform (including the Catholic universities) and those derived from the reform of the old universities.
- **Indirect subsidies,** to public and private institutions, based on the quality of their students, according to a national exam; and tuition, which was required in all institutions.

- In addition, the government created a system of student loans and a competitive fund for research, based on peer review.

There was also legislation to stimulate private donations to university institutions. These measures, combined with a radical reduction of public expenditures in higher education (a 41% reduction between 1980 and 1990, see Figure 1), led the institutions to search for other sources of income. In 1990, the universities received 34% of their resources from government, 22.2% from tuition, and the remaining from other sources.

### **Policies in the 1990s**

The democratic government that took over in 1990 decided to keep the broad lines of the system established in the 1980s, while working to improve it in several ways. These improvements included the establishment of a national Council for Higher Education (*Consejo Superior de Educación*), responsible for the assessment and accreditation of private institutions; a gradual increase in public subsidies – it is estimated that between 1991 and 2000, public expenditures in Chile on higher education grew by 74% in real terms (Brunner, 1999; Carnoy et al, 2001), although per student public spending in 1991-2000 only increased by about 5% in the same period. Most of the increased resources per student went into indirect spending, such as better terms for student loans that mainly benefited students from lower income families.

The decision to maintain tuition charges in public higher education and to stimulate the participation of the private sector in the provision of higher education, established by the previous regime, was consistent with the high private rates of return for higher education degrees, and with the need to gear public resources to basic education and other social priorities. At the same time, the growing investments in higher education, and the maintenance of strict formal lines dividing the different segments of Chilean higher education, responded to the perception that higher education could not be left just to the interplay of market mechanisms, and that historical realities, such as the existence of long-standing universities with strong traditions of autonomy and self-rule, should be respected.

Today, Chilean higher education is divided into four types of institutions. First, there are the 25 universities that are brought together under the Chilean Council of Rectors. These universities existed before the 1980 reforms, or were created by their subdivisions. Many of them are public, such as the prestigious Universidad de Chile; others are private in origin, like the also prestigious Universidad Católica de Chile. They are autonomous, charge tuition to their students, and receive direct public subsidies, as part of the country's national



budget. Their students, when in need, are entitled to subsidised student loans and fellowships. They provide higher education degrees that usually take five to six years to complete in the main professions, and some graduate education. The next segment is made up of private universities that were created in the deregulated environment of the 1980s. There are about 40 such universities. Most of them are also autonomous, but some are still under the supervision of the *Consejo Superior de Educación*. They charge tuition, and are not entitled to receive direct subsidies, but have access to indirect support, according to the quality of the students they can attract. They provide the same degrees as the subsidised universities, and some of them have high prestige and cater to high income groups. The third tier is made up of the professional institutes. They are also private, and cannot offer courses in the official list of 17 established professions, which are the monopoly of universities. They concentrate on four-year technology or “operations engineering” courses, and administration. The fourth tier is made up of centres for technical education, providing short-term, two-year vocational qualifications, mostly in administration and data processing, for students who do not qualify or cannot afford to enter the universities or professional institutes. They are also private, and not entitled to public subsidies.

Public and private institutions specialise in different fields of knowledge. In the private sector, social sciences, law, business and administration together account for about half the enrolments. In traditional universities, those areas take up less than 25%. Whereas in traditional universities, health, technology, and the basic sciences account for around 45% of enrolments, they are slightly above 15% in private institutions. These courses are often the most expensive to provide, requiring complex equipment and better qualified faculty, and are made possible by the public subsidies these universities receive. Private universities, on the other hand, tend to focus on low cost, high prestige programmes – thus trying to ensure access to indirect public funding, without making large investments.

## **Financing**

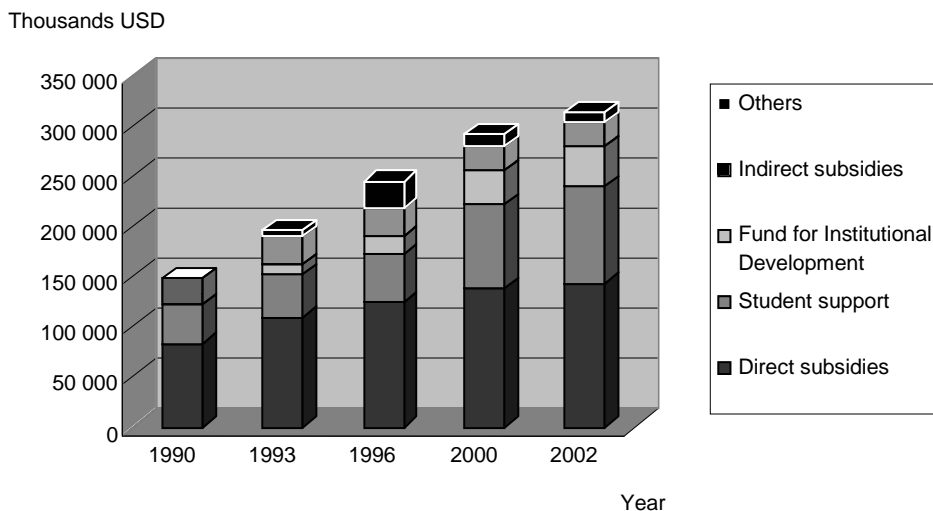
Figure 3 shows the evolution and composition of public expenditures in higher education. The expenditures doubled in real terms over twelve years, with most of the support going to the maintenance of the first tier of traditional universities (*aportes directos*). Student support also increased very significantly, a resource that is also used by students in the traditional universities. Special funds for institutional development were also made available to this group of institutions. Meanwhile, “indirect” public subsidies, distributed to public and private universities according to their ability to recruit high scoring students in the national assessment tests, remained stable. In 1990,

they represented 18% of the total public expenditures on higher education; in 2002, they were reduced to 7.6%. There may be good reasons for this gradual concentration of resources in the traditional universities, including the higher costs of some of their course programmes. It would be important to consider, however, whether or not this is creating an equity problem for students who cannot access those prestigious institutions, and whether there is a clear rationale for the establishment of the yearly subsidies to these institutions, beyond simple responses to historical trends and political preferences.

### **Growth and segmentation**

One of the expectations of the 1980s reformers was that non-university institutions, such as private-supported professional institutes and two-year technical centres would grow to absorb the rising demand for higher education, while keeping universities limited to the more traditional and prestigious professions, graduate education, and research. There was, and still is, a clear socio-economic stratification among the different types of institutions, with universities receiving students from the highest socio-economic groups. This stratification is due to the prestige and expected economic returns associated with a university degree, and is reinforced by the use of a uniform assessment of academic achievement as the key criterion in the selection of students for admission to higher education institutions. Part of the public support universities receive depends on the number of students they can attract who scored at the top of the university entrance test, called the Academic Aptitude Test (PAA). This creates a competition among universities that concentrates still further the best qualified students in a few prestigious institutions. Achievement in the university entrance test is strongly associated with the student's previous socio-economic and educational background. Higher-scoring students tend to do their secondary education in elite private schools, and the lowest by children from municipal schools. Students who do not reach the standards required by the most prestigious universities can go to the derived universities belonging to the Council of Rectors, where they can still have access to student loans. The only option for students that do not reach the minimum standard are the private universities, professional institutes and two-year technical schools, institutions which simply take whoever applies and is able to pay the tuition.

Figure 3. Public resources for higher education, 1990-2002 (thousands USD)



Source: Ministry of Education, presentation by Pilar Armanet A., January 2003.

The prestige and benefits associated with university education, the existence of student loans, the growing support they receive, and the autonomy enjoyed by universities to create new course programmes, has led to a constant growth of the two university segments during the decade, and the stagnation of the other sectors. Many students are willing to go into a university to obtain a technical degree, provided the degree states that it is that of *Técnico Universitario* (university technician) and not, as the law states, that of *Técnico de Nivel Superior* (higher education technician). Many professions are also lobbying for inclusion in the list of 17 “learned professions” – those with a legal requirement of *licenciatura* (entitlement to work in a given profession due to their university degree) which makes them necessarily university degrees – and this reduces the field for professional institutes. Finally, the perceived quality of professional institutes (with the exception of the two larger ones, INACAP and DUOC) and of technical training centres is very low.

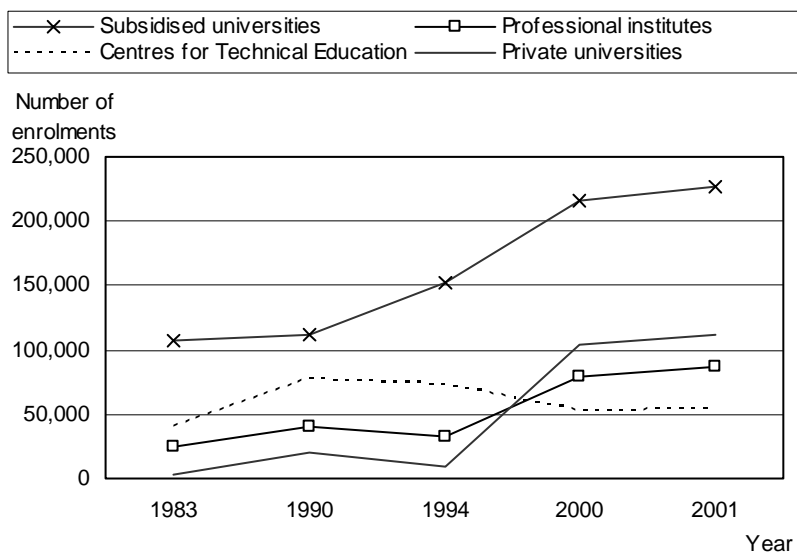
**Table 10. Mean scores in the Academic Aptitude Test (PAA), for the period 1992-1998, according to the students' secondary education**

Year	Private	Private subsidised	Municipal
1992	595.0	514.4	499.8
1994	579.3	501.5	484.6
1995	572.4	498.7	478.8
1996	580.5	505.1	478.2
1997	576.2	496.8	476.7
1998	575.2	495.6	475.7

Source: Contreras, Bravo and C. Sanhueza (2001).

To compensate for these social inequities, Chile has a system of credit loans that seeks to assure that qualified students will not be denied the opportunity to enter higher education for the lack of resources. Student loans, however, are restricted to students that enter the traditional universities, and are not available for students enrolled in new private universities, professional institutes, and technical schools. This policy, combined with the freedom the universities have to create new courses and increase the offering of places, has led to a constant growth of the university segment, and the stagnation of the other two.

**Figure 4. Chile, Enrolment in higher education by category, 1983-2000**



Source: Ministry of Education, presentation by Pilar Armanet A., January 2003.

There are other problems with this system of public loans, some of which the Chilean government is already addressing, with new legislation being considered in Congress. Today, loans are handed as block allowances to the universities according to estimations of their demand, and given to students according to their socio-economic conditions. The loans have a grace period of two years before commencing payment, the interest is 2% a year, monthly payments are limited to 5% of the graduate's income, and cease after 15 years. The level of underpayment and default is very high. Even if all borrowers paid their loans on a timely basis, the current limitations of 5% of income and a maximum of 15 years means that few students will ever pay their loans in full (Larrañaga, 2002). But loans are generally not paid on a timely basis. One consequence of this failure to pay is that the loans system requires constant injections of new resources, and cannot grow as it should, to provide financial support to more students. It seems clear that the current restriction of the loan systems to students attending traditional universities should be abolished, and replaced by some universal criteria based only on academic achievement (*e.g.*, 500 points or more in the academic entrance test), instead of test score and where the student is enrolled.

Today, the amount of the loans varies according to the tuition costs of each university, a policy that also needs to be revised, since it serves as an incentive to institutions to raise their tuition. The interest rate charged, the monthly ceiling, and maximum duration of payments should be revised, to make the system more balanced. The whole system would benefit from a more efficient and co-ordinated mechanism of cost recovery, instead of the current decentralised procedure. Given the extremely high private rates of return of higher education, there is no reason why a well-managed and largely self-financed loan system cannot be established and maintained.

### **Quality assurance**

Chile is taking important steps in the establishment of quality assurance mechanisms of its higher education institutions and their course programmes, a policy to be commended. Without it, the autonomy enjoyed by the universities, combined with the loans provided to students, could lead to uncontrolled growth of higher education institutions, without any assurance that these investments are being beneficial to the country. Quality assurance can help students and their families to know what the institutions are doing, and which ones are best for them. It can help government agencies to identify institutions and course programmes which are doing good quality work, or who need support to improve their performance. Quality assurance is not incompatible with academic autonomy, and the best way to combine both is to get the higher

education institutions involved in the establishment and implementation of a voluntary quality assurance system.

The current procedures, however, are extremely slow: only about 10% of the existing 2000 course programmes have been or are in the process of being evaluated so far, meaning that it would take about 10 years to complete the first evaluation cycle, with a second cycle, however, due to start in 2005. It is necessary, therefore, to look for other procedures to make the assessment timelier and more useful for the higher education stakeholders. It is also necessary to develop a reliable system of information and public accountability of higher education institutions. In their competition for students, Chilean universities are expending millions of dollars in marketing and communications every year, but the country still lacks an organised, reliable and homogenous system of information about the higher education institutions, their resources, their research and teaching staff, their students and their course programmes.

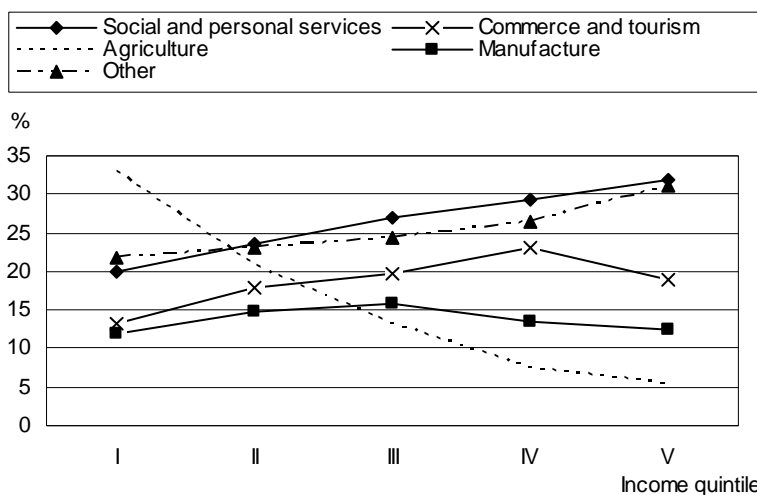
The Chilean higher education system still works under the traditional assumption that universities, once accredited, should be allowed to grant both the academic degree and the professional certification of their students to perform in their professions. However, the expansion of higher education, and the growing presence of new teaching and study modes, including semi-present and distance education, together with a growing presence of international teaching institutions, may require the introduction of certification procedures in areas such as education, health care and others, where quality control is needed in the public interest.

A crucial component of any reasonable quality assurance system is the provision of adequate information on costs, enrolment, student characteristics, resources, and the student's career pattern at each institution and in each course programme.

### **The Labour market for graduates**

A picture of the job market in Chile is given in Figure 5 with information broken down by income levels. This distribution is very similar to those of other countries in the region – most jobs are in urban services, with the lower income levels associated with agricultural jobs. People working in finance activities and personal services generally have higher education and therefore higher income levels. The higher income quintiles are dominated by people in those occupations.

Figure 5. Chile, active population by areas of activity and income quintiles



Source: Mideplan, Encuesta CASEN, 2000.

### Supply and demand

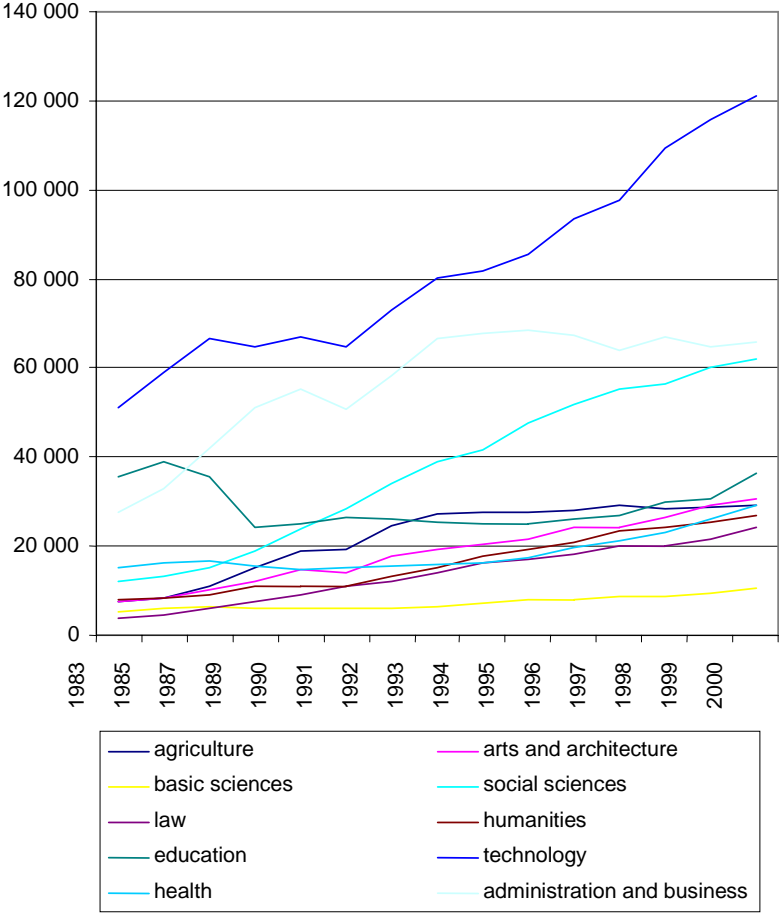
Figure 6 shows the changing relevance of the different areas of study in Chilean higher education throughout the years. “Technology” has always been the largest field, mostly as a technical and professional level, corresponding to what is known in the United States as “vocational” careers. Education (teacher training), which used to take a large share of higher education in the 1980s, lost much of its previous significance. Law, the social sciences and the humanities were the fields that grew most, but starting from a very small base.

Table 11 shows how public and private institutions specialise in different fields of knowledge. In the private sector, social sciences, law, business and administration together account for about half the enrolments. In traditional universities, those areas take up less than 25%. Whereas in traditional universities, health, technology, and the basic sciences account for around 45% of enrolments, they are slightly above 15% in private institutions. This shows that private universities are the ones that best adapt to the growing demands for social sciences, business administration, and law.

The Chilean data suggest that, until the early 1990s, the creation of a differentiated three-tier system led to the development of a very significant segment of “vocational” education, instead of a large segment of low quality law and administrative schools as in Brazil and other countries with more

homogeneous institutions. However, in the past ten years, there has been a drift towards higher education and the social professions. Together, today, technology, administration and business include around 40 to 45% of Chile's higher education students.

Figure 6. Chile, evolution of enrolment by fields, 1983-2000



Source: Data from the Ministry of Education, Higher Education Division, 2003.



Table 11. Chile, distribution of enrolments by fields and type of institution, 2001

	Universities		Professional institutes	Technical Education Centres	Total
	<i>Public</i>	<i>Private</i>			
Agriculture	8.8%	6.1%	2.3%	3.4%	6.4%
Arts and architecture	5.2%	10.3%	11.8%	5.2%	7.6%
Basic sciences	3.9%	0.6%	0.5%	0.2%	2.1%
Social sciences	12.6%	31.9%	12.1%	1.9%	15.8%
Law	4.4%	10.6%	0.0%	6.0%	5.2%
Humanities	1.6%	1.4%	0.6%	0.7%	1.3%
Education	15.5%	13.9%	7.5%	1.8%	12.1%
Technology	29.9%	11.7%	40.3%	27.5%	27.3%
Health	10.8%	3.4%	0.0%	12.5%	7.3%
Administration and Business	7.1%	10.1%	24.8%	40.9%	14.8%
Total	215 284	103 805	79 904	53 354	452 347

Source: Chile, Ministry of Education, Higher Education Division.

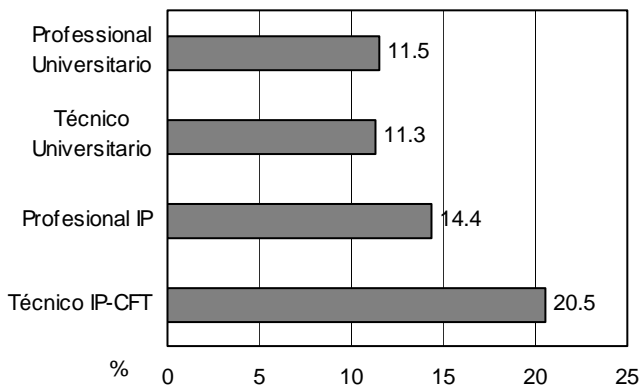
The Chilean Ministry of Education is creating a tracking system to follow the employment of higher education graduates, and Table 12 combines information on student enrolment by fields of knowledge, its growth since 1983, and the salaries graduates earn in the job market. One can see that the largest fields, social sciences and technology, continue to grow and are among the best paid, showing that the students behave rationally when they study in these programmes and look for jobs in these fields (Ministerio de Educación, 2000). The same study shows that unemployment among graduates from universities is significantly lower than for graduates from technical institutions (Figure 7). Therefore, the movement away from technical schools and institutes toward university education is also a rational decision from the students' point of view. However, it is a slow change, since the decision to study in a given field depends not only on the expectation of income, but also on the relative difficulty of access. The data suggest that the creation of a differentiated three-tier system initially led to the development of a very significant segment of vocational education. However, over time, there was a drift towards higher education and the social professions. Together, today, technology (mostly information technology), administration and business take up around 40 to 45% of Chile's higher education students.

Table 12. Chile, mean incomes, and enrolment, by fields of knowledge<sup>76</sup>

Fields of Knowledge	Income (a)	% enrolment (b)	Increase in enrolment, 1983-2000 (c)
Agriculture	815.23	6.50%	390.6%
Arts and architecture	561.98	6.87%	414.1%
Basic sciences	562.04	2.56%	202.9%
Social sciences	923.22	14.03%	506.2%
Law	1 151.34	5.41%	665.8%
Humanities	482.97	6.59%	341.3%
Education	474.48	9.08%	101.9%
Technology	991.64	27.06%	238.0%
Health	829.23	6.71%	192.8%
Administration and Business	536.30	15.15%	238.8%
Correlation a, b	0.30		
Correlation a, c	0.61		
Correlation b, c	-0.16		

Source: (a) Telephone survey, Ministry of Education, 2000: Mean Monthly income since 1995 in CPL, converted to US dollars of 2000 (ex. Rate of 539.49). (b) and (c) Ministry of Education, www.minedu.cl

Figure 7. Chile, levels of education and unemployment, year 2000



Source: Ministry of Education, Division of Higher Education, Mecesup Programme 2000.

<sup>76</sup> “Increase of enrolments” refers to increase in absolute numbers between 1983 and 2000.

## Efficiency

Students compete for places in the most prestigious institutions and career fields and need to pay tuition once they get into universities and technical schools. The costs may not be high by international standards, but are high relative to Chilean family incomes. To help students pay, there are significant subsidies and student loans for those in need, who are able to gain entrance to the first tier of universities – those 25 universities in the Council of Rectors.

Table 13. **Chile, annual tuition costs of undergraduate education (2002)**<sup>77</sup>

	Traditional universities	Private universities	Professional institutes	Total	Monthly income in US\$
Agriculture	2 145	2 488	1 526	2 084	815.23
Arts and architecture	2 258	2 902	1 861	2 275	561.98
Sciences	1 952		1 368	1 928	562.04
Social sciences	2 073	2 586	1 581	2 140	923.22
Law	2 410	2 698		2 610	1 151.34
Humanities	2 083	2 591	1 998	2 299	482.97
Education	1 458	1 882	1 318	1 513	474.48
Technology	2 151	2 580	1 428	1 871	991.64
Health	2 362	4 066		2 546	829.23
Administration and Business	1 771	1 922	1 397	1 577	536.30
Total	1 845	2 261	1 400	1 792	
Correlation with Income	0.65	0.34	-0.19		

Source: Prepared with information from the Ministry of Education, Division of Higher Education.

There is closer association between the costs of traditional universities and the earnings in the labour market than in other types of institutions. For the professional institutes, the main explanation for the discrepancy is the relative high cost of education in the humanities and arts. For private universities, the main distortion is the high costs of humanities and health. The availability of fellowships for teacher training in the humanities and arts, and the concentration of health education in the field of medicine may explain these differences.

A proper understanding of the impact of these costs has to be seen in terms of the subsidies and credit loans available to universities and students. Public money for higher education in Chile follows different routes: direct subsidies, limited to the traditional universities (49.2%); indirect subsidies, linked to the

<sup>77</sup> For monthly income, see Table 13, p. 62.

ability of the institutions to attract students with high scores in the Academic Aptitude Exam (PAA); a National Fund for Institutional Development, given to universities to support specific projects (12.9%); and 25.5% as loans and fellowships to students, currently limited to traditional universities. Besides, the legislation stimulates the private sector to donate to higher education institutions, and USD 29 million was obtained this way in 1998. In 1998, 58% of the students enrolled in publicly financed universities (which included both traditional and new universities, both public and private) received some kind of financial help. This figure reached 57% of weighted tuition *in those institutions*.<sup>78</sup>

There is no hard evidence that charging families for the cost of their children's higher education affects the "efficiency" of higher education, in the sense that talents are lost for lack of private resources; or equity, in the sense that persons from lower income families cannot access higher education. And it is clear that in Chile as in the rest of Latin America, many of the barriers to entrance in higher education are at the lower educational levels, in terms of unequal access to good quality basic and secondary education. That said, the way in which the university finance system now works, it seems that a significant number of lower income students (and higher income students) may score sufficiently high on the entrance exam (PAA) to qualify to attend university, but not sufficiently high to attend a university that gives funding for student loans except to those relatively few low income students who score very high on the PAA. For higher income students, this presents little problem, since they have the resources to pay the full tuition at these institutions. But lower income students would be much less likely to be able to bear the full cost of a private university that does not provide tuition assistance. Thus, at the large "lower end" of those who qualify for university entrance, there probably is inefficiency in the system – it is probable that a large number of middle and low income students who qualify to go to university but do not attend since they are not get accepted to the 25 universities that receive money to allocate to student loans, and cannot afford to pay tuition at other institutions. Many of these students undoubtedly score higher on the PAA than some higher income students, but the latter attend university because they can pay tuition. Since the number of students attending non-Council of Rectors universities represents about 45% of university enrolment, this inefficiency may be significant.

This plays out in the proportion of places that are occupied at a given moment.

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<sup>78</sup>

Brunner (1999), based on data from the Chilean Ministry of Education.

Table 14 shows a clear link between demand for places and the prestige (and student subsidies) associated with tradition and university status. Obviously, and similarly to what happens in other countries, on average, private institutions charging full tuition and which are not enjoying high prestige are not as attractive to students as higher prestige institutions able to subsidise their students.

Table 14. **Chile, enrolment and efficiency in the use of available seats, by type of institution (2000)**

Traditional, autonomous universities	92.7%	104 744
Autonomous, derived universities	90.3%	85 202
Private professional institutes	80.8%	59 790
Private universities	77.3%	69 886
Professional institutes under accreditation	71.3%	3 857
Universities under accreditation	69.2%	24 933
Universities under examination	67.5%	6 738
Professional institutes under examination	61.4%	9 685
Total	79.5%	364 835

Source: Council for Higher Education (Chile), 2003.

As pointed out above, all students applying to university must pass a national Academic Aptitude Test, which is used both for the selection of students and as a quality criteria for the universities and which affects the public subsidy they receive. Table 15 gives the mean tests of students admitted to different fields of knowledge and universities; together with other information. The main finding of this table is that PAA requirements vary more among institutions to which the student applies than on his or her field of choice. Students may apply to up to eight courses. Admission rates (the number of applications per available place) vary between 4.1 and 8.2 according to the field, and between 3.5 and 9.7 according to the institution, and are probably dependent on the geographical locality of the institutions, the number of available places, and the students' estimation of the relative difficulty of being admitted. The Catholic University of Chile, one of the most prestigious in the country, has one of the lowest application/admission rates (3.5 students per place, against 5.9 for the country as a whole) but is also the most selective, in

terms of the results in the PAA, suggesting that only the best-qualified students apply.<sup>79</sup>

In terms of efficiency of the system, these results suggest that a high fraction of students with relatively high scores on the university exam (allegedly the best students) attend university regardless of socio-economic background. The data also suggest that the “best” universities are probably attracting the best students (although the review team does not have much information about the kinds of students private universities admit, nor about the quality of most private universities), both because of their academic prestige and their government funding, allowing them to subsidise a substantial part of tuition through student loans. However, the system as a whole is undersubscribed (many unfilled places), and many students who pass the university entrance exam but at lower levels than one guaranteeing them entrance to a loan-granting university, do not attend. It is likely that all of these come from middle and lower socio-economic groups. One could argue that this is an “efficient” use of scarce public resources. But given the very high rates of return to university completion, it may not be. Rather, it may constitute a “barrier to entry” that allows the children of higher income families who do not score sufficiently high on the PAA to attend a Council of Rectors university and can afford tuition at a private university to gain a degree and be protected against the competition of equal ability lower income students.

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<sup>79</sup> Overall, only one in each 3.6 candidates going through the PAA entered university education in 2002. However, universities provide only 36% of Chile’s higher education seats, meaning that there are other opportunities for those who are not admitted to the most prestigious institutions.

Table 15. Chile: Vacancies, admissions and mean aptitude test scores of applicants to universities, 2002

	Courses	Vacancies	Applications(*)	Admitted	Admission rate	Mean academic aptitude test(**)
<b>a) Fields</b>						
Agriculture	10	840	4 289	1 035	4.1	612.6
Education	74	3 413	31 602	4 385	7.2	593.6
Health professions	85	4 724	46 132	5 365	8.6	687.1
Humanities	58	2 003	15 751	2 653	5.9	615.3
Natural sciences	91	3 823	28 411	5 124	5.5	616.7
Social professions	102	6 338	44 945	7 861	5.7	616.8
Social sciences	25	1 187	12 492	1 532	8.2	644.8
Technology	308	19 960	121 236	24 051	5.0	615.6
Total	753	42 288	304 858	52 006	5.9	622.2
<b>b) Universities</b>						
Pontif Universidad de Chile	32	3 213	12 731	3 593	3.5	713.8
Universidad de Antofagasta	20	1 240	6 831	1 554	4.4	568.0
Universidad de Atacama	13	545	3 667	619	5.9	537.5
Universidad Austral	30	1 680	11 304	1 924	5.9	618.7
Universidad de Bio Bio	30	1 742	11 753	1 912	6.1	601.1
Universidad de Chile	50	3 926	24 543	4 279	5.7	708.2
Universidad Catolica de Maule	14	845	5 595	915	6.1	616.4
Universidad Catolica del Norte	25	1 483	8 073	2 044	3.9	586.8
Universidad de Concepcion	65	3 543	31 577	4 645	6.8	632.7
U. Catolica de Stma Concepcion	16	1 193	9 666	1 890	5.1	584.8
Universidad Catolica de Temuco	21	1 020	7 316	1 527	4.8	554.7
U. Catolica de Valparaiso	49	2 380	15 985	3 511	4.6	646.9
Universidad de la Frontera	33	1 400	12 995	1 570	8.3	621.1
Universidad de los Lagos	19	825	7 174	1 080	6.6	544.9
Universidad de la Serena	29	1 535	9 346	1 810	5.2	582.4
Universidad de Magallanes	14	590	2 734	590	4.6	551.9
Universidad Metropolitana de ciencias de Educacion	23	993	5 818	1 005	5.8	616.9

Universidad Arturo Platt	25	1 305	7 623	1 621	4.7	538.1
Universidad de Playa Ancha	38	1 220	14 084	2 052	6.9	578.0
Universidad Austral	61	3 290	26 477	3 910	6.8	641.1
Universidad de Talca	20	1 223	7 507	1 385	5.4	552.7
Universidad de Tarapaca	14	1 000	5 672	1 150	4.9	636.6
Universidad Tecnologica Metropolitana	27	1 905	15 167	2 096	7.2	628.5
U. Tecnologica F. Santa Maria	52	2 100	10 151	2 624	5.8	630.3
Universidad de Valparaiso	33	2 092	26 069	2 700	9.7	624.3
<b>Totals</b>						
Applications	753	42 288	304 858	52 006	5.9	622.2
Candidates applying to the Aptitude Test			188 205	52 006	3.6	
Candidates obtaining 450 points or more in PAA			110 681	52 006	2.1	
Candidates applying to higher education courses			74 785	52 006	1.4	

(\*) Each candidate can apply for up to 8 courses.

(\*\*) Weighted by the number of students admitted. Association between fields and PAA scores: Eta: 0.365; Eta squared, 0.133. Association between institutions and PAA Eta: 0.757; Eta squared, 0.573.

Source: Tabulated from data provided by the Departamento de Evaluación, Medición y Registro Educacional de la Universidad de Chile (DEMRE).

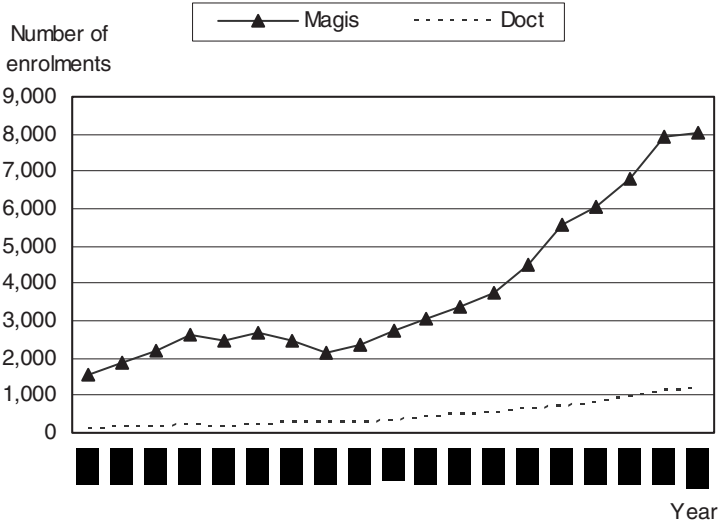
## Graduate education and research

Graduate education in Chile has been growing in recent years, but is still small. The expansion at the master's level followed a pattern similar to Mexico's, as a response to the demand for more qualified degrees in the education and services sectors. Doctoral degrees, on the other hand, have not expanded very significantly. They are concentrated in the traditional universities, and research is supported by research funds managed through the National Council for Science and Technology (CONICYT). In 1997, 354 projects were approved and supported by CONICYT, at an average cost of USD 17.2 thousand each. In a comparison among countries of comparable size or level of development, Brunner finds that the number of Ph.D. graduates per million inhabitants in Chile is lower than in Brazil and Mexico (3, 11 and 4, respectively), and very far from countries such as Finland, the Netherlands and Ireland (120, 98 and 77). This, together with several other indicators of



scientific and technological development, led the author to conclude that Chile is lagging behind in terms of its scientific, technological, and innovative capabilities (Brunner, 2001).

Figure 8. Chile, enrolment in graduate education, 1982-2000



Source: Council of Rectors of Chilean Universities, Statistical Directory, years 1982 to 1999, Santiago, Chile; Department of Information, CONICYT; Ministry of Education, División de Planificación y Presupuesto, Información Estadística 2000; Chile; Compendio de Información Estadística, Ministry of Education, 1989-1998; Ministry of Education, División de Planificación y Presupuesto, Información Estadística 2000; Scientific and Technological Indicators-1998. Scientific and Technological Indicators-2000.

Because of the large private benefits that come from graduate studies, particularly for those looking for jobs in the private sector, equity suggests that only graduate students willing to engage in academic and research careers should benefit from public subsidies. Nevertheless, market rate loans should be available to graduate students, and the government may decide that some particularly fields with high externalities, such as agriculture or electrical engineering, should be allocated subsidised loans in order to attract talented individuals.

Table 16. Chile, enrolment in graduate education, by specialty and level (2000)

	Ph. D	Master	Openings (2001)
Agriculture	8	325	57
Arts and architecture		281	143
Basic sciences	691	528	325
Social Sciences	64	2721	1237
Law		231	158
Humanities	143	731	231
Education	42	1231	350
Technology	131	641	354
Health	65	325	123
Total	1144	6924	2978

Source: CONICYT.

## Conclusions and recommendations

This brief overview of higher education in Chile confirms that the country should start to consider whether the existing segmentation of its higher education, which affects the way public subsidies and student loans are distributed, and the relative autonomy of institutions to provide different types of courses and education, should be revised. The concentration of public subsidies and student loans in traditional universities can be understood in historical terms, but it is important to evolve towards a system that relates public subsidies more closely with issues of equity and results. In this line, legislation has already been presented to Congress in tandem with the quality assurance project that provides for subsidised loans to students in private institutions. Institutions must be accredited so that their students have access to loans. The government has also made it clear that all universities in the *Consejo de Rectores* must apply for accreditation, and that eventually, all public funding will be linked to quality assurance processes.

In the past, the main equity problem in Chile was the provision of access to primary and secondary education. Today, the main equity problem at the initial levels is access to *good* education, and at least part of the access problem has shifted to higher education. At initial levels, there is a need to provide underprivileged groups with resources to overcome their handicaps, due to poverty, social discrimination, or lack of family support and stimulation. For this, public schools should be as good as possible, and teachers should receive the proper support and training to deal with the problems of social inequities within the classrooms. Direct support to families, to enable and stimulate them to send and keep the children in schools, can also play an important role, if associated with improved schools and teaching.

In higher education, the high private and social economic benefits to university completion, should lead to policies that require students and their families to pay for their studies, while making sure that higher education continues to expand rapidly, and does not remain a privilege of youth from higher income families. The best policy instruments for this are expanded student scholarship and loan programmes, and programmes aimed to provide students from lower socio-economic backgrounds with more and better education opportunities. The same reasoning should be applied to graduate education, with subsidy and grants restricted to areas of special need and low market demand.

The trend for growth of university education and the decline of the professional institutes and centres for technological education suggests also that the current course sequences may be revised and evolved into a “Bologna” type of higher education organisation, with an initial degree of three or four years for all students, followed by a one or two years Master’s degree, to be continued eventually by doctoral studies and specialisations. Post-secondary technical education should be improved, and the Ministry of Education is making significant efforts in this direction; but it is unlikely that it would absorb a significant demand for higher education, given the much higher returns of full university degrees. Such an arrangement could make the system more equitable, by providing all students with a similar baseline. It would also make it more flexible, would allow for diversified education paths; and could be more efficient than the present one, by reducing excessive academic requirements when they are not needed. Finally, it would be more compatible with international trends, and facilitate international academic and professional exchanges.

It seems clear that the current restriction of the loan systems to students to traditional universities should be replaced by some universal criteria of means testing and academic achievement (say, 500 points or more in the academic test), regardless of where the student is enrolled. Today, the amounts of the loans vary according to the tuition costs of each university, a policy which leads to an incentive to institutions to raise their tuitions. The interest rates, monthly ceiling and maximum duration of payments should also be revised, to make the system more balanced. And the whole system would benefit from a more efficient and co-ordinated mechanism of cost recovery, instead of the current decentralised procedure. Given the extremely high private rates of return of higher education, there is no reason why a well-managed and largely self-financed loan system cannot be established and maintained.

Chile is starting to consider the development of certification systems that could attest to the competency of the graduates, going beyond the traditional assumption that universities, once accredited, should grant both the academic degrees and the professional certification of their students. However, the expansion of higher education, the emergence of new teaching and study modalities, including distance education, together with the growing presence of international private institutions entering the university “business,” requires the introduction of certification procedures in areas such as education, health care, and others, where quality control is required by the public interest, without restricting the expansion and diversification in the supply of learning opportunities of different kinds. Several professions are working on this, the medical one being the most advanced. The proposed law on quality assurance provides for a proposal of professional certification in a maximum term of two years. Teacher certification should be a priority.

To move toward a closer association between public subsidies and results, Chile needs a much better system of public information on costs, enrolment, student characteristics, resources, and the student's career patterns of each institution and course programme. This information is also needed for the students, to enable them to make informed decisions about their career choices.

Finally, it is worth mentioning that Chile could do more to strengthen graduate education, both as a source for higher-level education of the academic faculty of its universities, and for increasing the country's competence in innovation, to share and reach out to the existing pools of advanced science and technology in the world, adapting it to the country's needs.

These recommendations are more easily said than done. It is relatively easy to set up and work for quantitative targets, such as rates of enrolment, promotion rates, academic qualifications of teachers, number of schools built, or expenditures per capita. It is much more difficult to develop competence, to identify policies and pedagogies that work, and to make sure that students are learning what they should. In higher education, it is easier to increase enrolment by lowering standards than to develop programmes to bring students with poor education backgrounds to higher academic standards. It is easier to pretend that all degrees are the same, and all course programmes have to follow the same models, than to devise multiple career patterns and institutional models adapted to a changing and highly differentiated environment.

## Specific recommendations

University enrolment and graduation need to be expanded over the coming decade. The economic returns to university completion in Chile are among the highest in Latin America. At the same time, Chile subsidises university education with public funding less than any other country in the region. Chile must try to maintain quality in higher education as part of this expansion. Given the autonomy of the higher education system, and the large number of private institutions, this will require considerable innovation in “soft” forms of regulation and incentives to encourage higher education institutions to participate in quality control.

The review team endorses current Ministry of Education efforts to expand voluntary accreditation of increasing numbers of universities and efforts to expand the student loan programme to private universities. Although the current accreditation programme is a mild form of quality regulation at best, it is a start. It is important that those private universities and technical institutes that participate in accreditation programmes (and which are accredited) get priority in access to student loan funding.

The review team recommends professional certification above and beyond the current method of automatic certification through completing university degrees. Professional certification is especially important in education and health care.

The review team is concerned that reasonably qualified students from low and middle income backgrounds who could be successful in university not be restricted access to higher education because of financial barriers to entry. In this regard, the Ministry should conduct a systematic research study to determine the size of this problem by surveying a random sample of those students who take and pass the PAA. How many of these students do not attend university due to financial constraints? What is the relationship between parents’ income, test score on the PAA, and university attendance? Such research would enable the Ministry to estimate the degree to which expanded student loans and scholarships would serve efficiency and equity concerns.

To make expansion of student loans more viable and self-funding, the government should do more to assure loan repayment, even through automatic pay deduction, as part of the income tax system.

Efforts should be made to improve post-secondary technical education. As higher education continues to expand, increased numbers of students will

continue their secondary vocational education at post-secondary technical schools. These should be upgraded and subject to accreditation.

The Ministry should explore, with the universities, a move away from the current traditional system of an official list of 17 “learned professions,” which are the monopoly of the universities, with course programmes of 6 years or so, and adopt the “Bologna” type of model, with shorter undergraduate courses followed by Master's degree programmes.



## Chapter 7

### EQUALITY OF OPPORTUNITY TO LEARN IN CHILE<sup>80</sup>

This chapter focuses on the equality of opportunities to learn, education policies on equity and the main strengths of the educational reform fostering equity. It identifies weak points in the country's educational policy concerning equity and describes the view from the classroom on what students learn and the view from schools on education policies. It deals with the issue of structures and management and equity and administrative weakness of regions and municipalities to provide equal opportunities in education.

Educational equity is an important objective in today's Chile, for good reasons. Some Chilean education policy makers have argued that the legitimacy of democracy rests on the extent to which it provides people with equal opportunities, among which the opportunity to receive a quality education is paramount.<sup>81</sup>

Thus, it is understandable that Chilean government officials look to schools to shore up popular support for democracy. In a periodic public opinion poll the percentage of the Chilean population indicating that democracy is preferable to any form of government declined to an all time low of 45% in 2001 (from 61% in 1997). This was lower than support for democracy in Argentina (58%), Costa Rica (71%), Peru (62%), Uruguay (79%) or Venezuela (57%).<sup>82</sup> Among the countries included in this periodic survey Chile is one where the greatest percentage of the population is indifferent to regime type (with 31% of those surveyed in 2002 indicating that they are indifferent to a democratic vs. a non-democratic regime type). By comparison in Uruguay and Costa Rica a very small proportion of the population said they were indifferent

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<sup>80</sup> The review team appreciates the generous feedback of Beatrice Avalos, Loreto Fontaine, Marcela Gajardo, Juan Enrique Hinostroza, Loreto Fontaine, Sonia Lavin, Sergio Martinic, and Ernesto Schiefelbein who commented on a draft of this paper.

<sup>81</sup> Garcia-Huidobro (2000).

<sup>82</sup> Latinobarometro, cited in *The Economist*, July 28, 2001, vol. 360, No. 8232.



(9% and 7% respectively).<sup>83</sup> Only one in four Chileans surveyed is satisfied with how democracy works in the country. Perhaps more troubling, only 13% of those surveyed in Chile say that they believe most people can be trusted. Interpersonal trust is one of the basic conditions for the legitimacy of democratic rule.

Tentative support for democracy and civic culture and the perception that educational opportunity is one source of legitimacy for democratic States suggest looking carefully at the reasons behind persistent inequalities in the educational opportunities available to different income and ethnic groups in Chile.

The SIMCE test shows serious gaps in the educational achievement of different income groups as shown in Table 17.

Related to these differences in learning, children from different income groups face different odds of finishing elementary school, of beginning and completing secondary and eventually of accessing college. One in four (23%) of the students aged 15-19 years-old in the poorest quartile drops out of school before finishing high school, in comparison to 4% of the students in the wealthiest quartile.<sup>84</sup> Among those who drop out, 44% do so during the primary cycle and an additional 32% at the end of the primary cycle.<sup>85</sup>

Table 17. Chile: Fourth grade SIMCE results, by socio-economic group, 2002

Income Group	Language	Mathematics	Natural and Social Understanding
A (lowest)	226	220	227
B	232	229	232
C	254	250	253
D	280	274	279
E (highest)	302	301	300
Country	251	247	250

Source: Ministry of Education. SIMCE Data 2002. The group classification of schools uses the variables family income, education level of the father and the mother, and a vulnerability index.

Few of the recent policy initiatives have explicitly addressed issues of access to education or reasons for secondary school dropout. There are large disparities in access to secondary school by income group, although these have

<sup>83</sup> Latinobarometro, Informe de Prensa, 2002.

<sup>84</sup> ECLAC (2002), p. 112.

<sup>85</sup> *Ibid.*, p. 108.

changed *positively in terms of equity criteria* during the 1990s as shown in Table 18. The odds to be enrolled in secondary education were 21% greater for a youth in the upper quintile of the income distribution than for one in the poorest in 1990, the same odds dropped to 16% in 2000.

Table 18. **Students enrolled in secondary education, by income group, 1990 and 1998 (%)**

Income Quintile	1990	2000
I	73.3	82.3
II	76.3	88.0
III	80.5	92.4
IV	87.2	96.1
V	94.2	98.5

Source: Mideplan, Situación de la Educación en Chile. Informe Ejecutivo Año 2000. Gráfico 7.

Based on these equity gaps, access to higher education in Chile is also highly inequitable with predictable consequences for the opportunities of different income groups to exercise political and social leadership. A recent study of leadership in Chile highlights that 82% of the business leaders and 45% of the political leaders are graduates of private schools, even though such schools serve only 9% of the students (La Tercera, Junio 7. p. 3).

### **Education policies and equity**

Educational policy in Chile is exemplary with regards to equity on various counts. One of them is that, in spite of the negative legacy left by the military regime that ruled the country for 17 years until 1990 (consisting of a very deteriorated educational system, an educational law that was passed the day before the democratic government took office locking many of the previous reforms into place, a rigid structure governing the educational ministry, inherited civil servants, a demoralised teaching force, and the difficult political climate to build consensus after 17 years of authoritarian rule), democratic administrations have steadily and consistently sought quality and equity throughout the educational system over the last 13 years. A cornerstone of this process of continuity was the political consensus achieved as a result of the work of the Brunner commission in 1994.

The educational reforms that took place during the military regime, and especially after 1980, sought to reduce government spending on education by decentralising its administration to the municipalities, to foster competition

among schools by allowing private ownership with public subsidies per student, and to achieve greater efficiency in the cost-benefit relationship between spending and output.

The first two of these objectives were largely achieved: public spending in education (and spending in education in general), particularly per pupil spending, was reduced (see Chapter 4) and many new private operators were attracted to investing in education, especially in densely populated urban areas (to a much lesser extent in rural regions). The third objective – efficiency – was achieved in part: enrolment increased at the secondary level. However, the quality of education at best stagnated, enrolment in primary school decreased, and, as teachers' salaries declined and the teaching profession ceased to be a State profession – teachers' employment and salaries were negotiated as individual contractors with private school owners and municipalities – the teaching force had few opportunities for professional development and was clearly frustrated due to lack of avenues for advancement and poor teaching and living conditions.

The educational reform of the military deepened previously existing inequalities in education. As a result, the democratic government inherited a highly unequal educational system. The rural areas and the poorer urban sectors received the worst provision of education.<sup>86</sup> Equity was not an objective of the Pinochet government. There were no compensatory measures for the inequalities created and deepened by the voucher financing schemes. As a result, the educational system in the beginning of the 1990s was strikingly segmented.

The democratic government decided to carry out a deep educational reform within predefined moulds: an undemocratic educational law, a rigid ministerial structure, and a drastically decentralised and privatised educational system. As a result of these reforms educational expenditure has tripled since 1990. Basic educational conditions have risen dramatically in little over a decade: coverage at the basic, middle and higher levels has increased substantially, completion rates have increased, repetition and dropout rates have fallen, infrastructure has expanded to reach all areas of the country, and teachers' salaries have increased threefold. The objectives of quality and equity at all levels of the educational system, but particularly at the basic and secondary levels, have been permanent and consistently pursued since 1990. It is worth underlining the impressive progress that has been made in 13 years in surmounting the difficulties encountered at the turn of the previous decade, as well as the continuity of

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<sup>86</sup> Cox and Lemaitre (1999).

educational policy and the persistence of the educational objectives of quality and equity. Educational reform in Chile since 1990 has been persistent, creative, integrated and true to a set of principles developed from the onset of the return of democracy related to the importance placed on students and their actual learning, as well as on the teachers who make this learning possible.

### **Principal strengths of the educational reform fostering equity**

Perhaps the most startling aspect of the Chilean educational reform in the 1990s regarding equity is the fact that important changes have always begun with the poorest schools and sectors of the population. This is of course true of compensatory or targeted programmes. The rural school programme is aimed precisely at small one-teacher or multi-graded schools in rural and indigenous areas so that they can benefit, through rural micro-centres that receive professional training and pedagogical support, from the wider educational reform. The P-900 (or 900 School Programme) is destined to improve both educational inputs and teaching in the 10% worst-performing schools in the country. The more recent critical schools programme offers private parties, mainly NGOs specialised in education, the challenge of redeeming schools that have very poor performance and have not shown improvement in several years of benefiting from other targeted programmes.

Affirmative action is present in many other aspects of the reform. A case in point is the full day school programme (*Jornada Escolar Completa*), which began with rural schools and the poorest schools in urban areas, as well as with schools participating in P-900 – the lowest decile in learning achievement. This ambitious programme that aims at converting all schools to full-day schools in a country where traditionally a two-shift school day was normal in urban areas, was not able to attain its objective of reaching all primary schools by the year 2002, as was originally planned, due mainly to slower growth in the Chilean economy beginning in the late 1990s, just as the reform was beginning to be implemented. The deadline for bringing all schools to full day has been extended to the year 2006.

Increases in educational spending have also been guided by equity objectives. Subsidies to privately-owned and municipal schools vary according to the context in which they operate. The public subsidy per student is higher in dispersed rural areas. School meals have been an important form of assisting low income students and encouraging their continued enrolment in school. Intercultural bilingual education is, as of 2003, receiving a significant portion of the education budget in order to improve the quality of education for the considerably neglected indigenous population, much of which is in urban areas. This budget is higher than that allotted to Basic Education Special Programmes.

Scholarships are being awarded to 28 000 indigenous students at all levels of education in order to insure both their access and permanence in the educational system. Other aids such as transportation subsidies and special scholarships are available to very poor rural and urban populations (Williamson, 2003). There has been a substantive increment in the number of beneficiaries of the programmes run by JUNAEB from 1990 to 2002 (681 000 to 1.2 million).

At the secondary school level (grades 9 to 12), which will become compulsory in 2004, special efforts are being made to reduce dropout rates which have been steadily decreasing since 1990 (from 10.3% in 1991 to 7.5% in 2001). The programme includes scholarships for students from low income families regardless of scholastic achievement. It also involves special mechanisms to help students with key subjects such as mathematics and science. The “pro retention” subsidy is also an important mechanism for achieving 12 year schooling. Another important and expensive programme at this level is the *Montegrande* project aimed at fostering innovation within secondary schools to face and solve some of the important achievement problems encountered by students in marginalised contexts. The team considers these programmes to be especially important, due to the fact that there is a serious threat to equity in increasing the duration of compulsory education when there are still significant dropout rates in the previous levels and when full coverage has not been achieved in secondary school. The effects of increasing compulsory schooling can also affect the occupational prospects of lower income students. As employers begin to demand certificates at the compulsory level for entry level jobs, the most disadvantaged students are more likely to be excluded.

Overall primary school dropout rates are comparatively low in Chile, but they still affect around 3% of the primary school-age population, most of whom come from the poorest households. At the secondary level, a higher proportion of the corresponding cohort is enrolled than in other Latin American countries (85% attend school). Still, a non-negligible part of the population from the corresponding age group is not attending the level of education about to be declared compulsory. Compensatory measures such as those already being taken, and perhaps even more specific and determined measures, such as conducting studies to establish the reasons for dropout in order to design specific programmes, providing schools offering all grades of mandatory education within reasonable distance of the homes of all students, providing scholarships to allow low income students and their families to forego earnings while they study and reviewing the curriculum of instruction at the secondary level or allow spaces in the curriculum for local adaptation and extension in order to ensure that the content of what is learned is relevant and of high quality for all students, and provide services of school counselling and appropriate

referrals to integrated support services to students to address the health, mental health and economic needs of children in difficult circumstances, should be adopted in order to prevent increases in education and labour market inequality.

According to household survey data (CASEN) 142 000 youth aged 14-17 years dropped out of secondary school. In a survey of those students they mentioned as principal reasons for dropping out of school economic necessities and poor academic performance.<sup>87</sup>

Although the *Enlaces* programme is an excellent and far reaching project that promises to reduce the digital gap in education in the country as a whole, so far it has not been able to solve technical problems that would have allowed rural schools to be among the first and to benefit most from ICT in education. In spite of these overwhelming limitations, *Enlaces* searched for ways to reach rural schools with technology that can in a way make up for the lack of connectivity, and has designed a special model for ICT in rural schools, different from the urban school model, but aimed at making the most of the possibilities of technology in remote rural and indigenous areas. Indeed, about 2000 rural schools have been integrated into the *Enlaces* programme through this model. The team considers this effort to be truly worthwhile and would encourage *Enlaces* to pursue it further. Given the existing digital divide it is imperative that education policy act deliberately to counter it. The 2002 Census indicates that only 21% of Chilean homes have a computer and 10% have Internet access. However, as shown by SIMCE data, only 4% of the fourth grade students in the schools with the lowest vulnerability scores (INE of JUNAEB – *Junta Nacional de Auxilio Escolar y Becas*) have a computer at home and only 1% have access to Internet. These figures compare with 88% with access to computers and 67% with access to Internet in the group with the highest income bracket (Table 19).

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<sup>87</sup>

UNICEF (2000). p. 14.

Table 19. **Access to computers and Internet, grade 4 students, by socio-economic group, 2002**

Income Group	Social Indicators		Students	% of Total	Availability of ICT at Home (%)	
	Family Income (in USD)	Parent's Education	Grade 4 Students		Computer	Internet
A	1 621	7 years	28.099	10	4	1
B	2 151	9 years	87 395	32	8	2
C	3 270	11 years	100 993	37	22	8
D	6 947	13 years	39 403	14	53	27
E	20 118	15 5 years	18 974	7	88	67

Source: "Prueba SIMCE 4º Básico 2002: Análisis de Resultados", Ministry of Education, July 2003.

The team had the opportunity of analysing each of these affirmative action programmes and other programmes aimed at insuring equity. It considers this one of the very strong aspects of Chilean educational reform. It is important to maintain equity as one of the main criteria for defining and judging policy decisions because in highly unequal societies there are strong social forces that foster educational inequality. These pressures need to be explicitly curbed in order to maintain and improve equality of educational opportunity and greater equity in outcomes. The Chilean example of intentionally seeking equity measures in each of its policy decisions is an important one for other countries and one that should be strengthened within the country itself.

In spite of these worthwhile emphases on some of the Ministry's programmes, most educational policy decisions are neither targeted nor affirmative-action programmes, but are aimed at all schools regardless of the income level of the families or of the cultural context of the schools. This is true, in fact, of most of the important aspects of the educational reforms of the recent past: the curricular reform itself, free text books, professional development of teachers, school management reforms and school projects, educational infrastructure, assessment and feedback, etc. The question from the point of view of equity regarding these far-reaching and all-encompassing policies is whether they reach different socio-economic and cultural sectors of the population in the same way and with the same quality, or whether different contextual conditions in different institutions and the process of implementing these policies transforms them with the unintended consequence that they exacerbate equity gaps.

In many cases, more focused studies are needed in order to be able to answer the question of how the various policies in place are influencing equality

of educational opportunity. It is generally accepted that it is more difficult for educational inputs to be translated into better teaching practices and, therefore, improved learning in poorer areas than in more advantaged environments. There is a need for closer and more intense preparation and support to principals and teachers for the adequate use of new curricular guidelines, text books and ICT, school management tools, etc. Educational assessment is probably more difficult to understand and use in poorer areas, especially with the students' families. Supervision reaches disperse rural communities more rarely or not at all.

### **What is the case in Chile?**

Targeted programmes, in addition to their own special inputs, differentially help poor schools to use generalised educational inputs. Such is the case of the *Escuela Rural* programme, the P-900, the Bilingual-Intercultural Education Programme and the Critical Schools programme. These programmes do not function in isolation from the rest of the educational system, but rather insure the integrated and contextualised use of available resources. They make intelligent use of new policy decisions that are translated into additional or improved educational inputs to the school. The presence of targeted programmes in the schools that need special attention guarantees, up to a point, that this additional supply of training and accompaniment is in fact not only offered, but is also adapted, to the needs of the schools. This is another perhaps more intangible virtue of targeted programmes in Chile, and perhaps a feature that should be more closely evaluated.

The team noted with preoccupation a tendency to decrease the importance of affirmative action or targeted programmes in favour of more universal programmes in basic education, such as the reading and mathematics programmes destined to all schools. The review team recommends that the levels of financial support to programmes such as P-900 and *Escuela Rural* are maintained and sufficient to address the persistent education gaps (*Bilingual Intercultural Education* has a separate source of financing). These programmes have been shown to impact equity and to reduce the gap between lower and higher income groups and between poor-performing schools and the national average, though these results are lower than expected and have decreased over the last 8 years due, perhaps, to reasons discussed below (see structural constraints). The review team suggests that these programmes should be renewed, the strategies thoroughly reviewed, and support for them strengthened.



## Weak points in Chilean educational policy concerning equity

There are some important differences in the way generalised policies reach different schools. As noted, the *Enlaces* programme has faced technical difficulties in connecting rural schools to the Internet. Perhaps more importantly, many rural schools offer only six school years instead of the eight primary school compulsory curriculum. The increase in compulsory education will further marginalise those who do not reach the eighth grade. At present the percentage of students who drop out before secondary school in rural areas is more than three times that in urban areas (24% vs. 7%). In rural areas, 14% of students drop out during primary school and an additional 10% upon completion of primary and 3% drop out during secondary. In urban areas 4% of the students drop out during the primary cycle, 3% upon completion of primary and 3% in secondary school.<sup>88</sup> The rural population in Chile is small, and the population in very dispersed rural communities, where this phenomenon is concentrated, is even smaller. Nevertheless, it is evident that a very high proportion of grade 6 graduates will not be able to continue their schooling and that the State is thus not meeting its constitutional mandate of offering compulsory basic education to all the population, even as the Ministry moves to increase compulsory education to 12 grades. For the youngest groups, those aged 15-24, there is a two year gap in favour of those living in urban areas, on average youth in urban areas have completed 10.6 years of schooling, compared to 8.9 years of schooling among those in rural areas.<sup>89</sup>

Less serious, but nevertheless noteworthy, is the issue of small rural schools. A number of rural schools with very few students are not tested by SIMCE (the educational assessment system), due to the high costs involved (and the allegedly small benefit obtained) in the application of very few tests in remote and difficult to reach communities. It is possible that learning results would on average be lower in these schools than in larger rural schools or in urban regions. The use of SIMCE to identify schools that need special support, therefore, does not cover the entirety of Chilean schools needing additional help. The theoretical benefit of SIMCE for improving learning in schools by offering feedback on special difficulties each school is facing does not reach a certain number of schools in the country. Even if this represents a small percentage of all Chilean students, it is probably the most marginalised group in the country.

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<sup>88</sup> ECLAC (2001), pp. 259-261.

<sup>89</sup> *Ibid.*, p. 237.

The review team must also mention that school supervision no longer reaches rural schools – and it never really did so effectively. Pedagogical support and professional teacher training is offered in the rural micro-centres that were established as part of the *Escuela Rural* programme. This is not necessarily an indicator of inequality since differentiating the ways of reaching schools according to context and diverse needs is good education policy. The micro-centres give teachers that work alone or with one or very few colleagues the opportunity of discussing and learning with a larger group of teachers. Supervision can be more intense and prolonged in the micro-centres than in the schools. The possibility of catering to the special needs of the school is not necessarily cancelled through this strategy. Nevertheless, the continued presence and the strengthening of such a targeted programme as the *Escuela Rural* would seem indispensable for insuring improved equity measures and results regarding rural schools.

Even though there is less information about differential supply and use of educational inputs by socio-economic and cultural characteristics in non-dispersed rural and in urban regions, there is reason to believe that this also occurs, as it does in any educational system. Efficient and integrated use of resources is clearly mediated by school leadership and the characteristics of school management and team work by teachers. This is also not equally distributed among schools according to income levels of the families it services. Educational expectations on the part of both teachers and parents differ according to socio-economic and cultural milieus – schools use what is available to them with different intensity and in different ways. The review team observed no mechanism that monitored these important differences – differences that undoubtedly affect the achievement of equity objectives.

Therefore, structures are put in place to allow for an adequate distribution of universally designed policy measures, mainly in the form of targeted programmes that among other things integrate educational, pedagogical, didactic and management resources made available to the schools. These structures must not only be maintained but strengthened. But there is also evidence that inequality is imbedded in some policy decisions – especially for rural schools. Inequality also occurs, and is probably not sufficiently monitored, in the differential use by schools of different socio-economic contexts of the pedagogical and management resources made available by far-reaching Ministerial programmes.

Other weaknesses of current policies from the point of view of equity include the relatively low coverage of pre-school education. For an educational system with coverage of 85% in secondary school and of 28% in higher education, the fact that only one third of the students between 0 and 5 years of

age are surprising, although at age 5 it is 93.8% (250 591) receive pre-school education. Coverage is even lower in dispersed rural and marginal urban schools when compared to urban areas.<sup>90</sup> It is well known that it is precisely the children from low income families who need pre-school the most in order to compensate for the inability of the family to offer the conditions for preparing for school. Given the potential of pre-school intervention to foster the development of pre-literacy skills, and given the low levels of literacy skills of Chilean students, this equity gap should receive attention. The team has noted that Chile has decided to increase the coverage of the pre-school years. The team considers this decision important, as well as the fact that special efforts should be made to begin to increase coverage in the poorest areas.

Another negative feature of the Chilean education system is the very large size of classes. The maximum number of students per class, forty-five, is, according to what the review team saw in its visits to schools, actually not far from the norm in densely populated urban and urban marginal areas, which average about forty students per classroom. However, national averages of the different types of schools are lower as shown in Table 20.

Table 20. **National average of class sizes per level and type of schools (2002)**

Type of school	Primary Education			Secondary Education		
	Municipal	Private subsidised	Private	Municipal	Private subsidised	Private
Average class size	33	36	24	33	36	25

Source: Ministry of Education, 2002.

This is true of all grades and all ages, when it is a generally accepted result from research that the size of classes affects younger students more than the older ones, and that small classes can be particularly beneficial to support the academic success of low income students.<sup>91</sup> Students in grades 1 to 3 find it difficult to function in classes greater than 30. Pre-school classes should not be above 20. Older children, after grade 4, may be able to cope better with a large number of classmates and therefore less opportunity and frequency of personal contact with the teacher, although even at older ages, large class size may affect student performance, particularly of disadvantaged students. Recent research in

<sup>90</sup> Schiefelbein and Schiefelbein (2003).

<sup>91</sup> For a review of the recent literature on class size effect on student performance, see the Summer, 1999 issue of *Educational Evaluation and Policy Analysis* (Vol. 21, No. 2): Special Issue: Class Size: Issues and New Findings.

Latin America has also shown that the size of classes, and the consequent reduced opportunity of personal contact with the teachers, affects poorer children more than economically advantaged ones, since for the latter “liking school” (*i.e.*, feeling accepted, respected, in personal rewarding contact with the adults and children in school) is one of the most important factors for explaining differences in their educational attainments. This would probably help explain why private subsidised schools in Chile, that tend to make a more efficient use of resources including human resources, have lower average achievement than municipal schools in those schools catering to students from the two lower income quintiles (see Background Report, Chapter 2). It would, therefore, seem to be advisable to review the regulation on class size and to differentiate by grade and socio-economic level of the population, even though this would be a costly reform.

Intercultural and bilingual education policies have been an afterthought in the recent education reforms and have yet to manifest themselves in the form of significantly changed conditions in the learning opportunities of indigenous children. It is not clear in fact that there is a coherent intercultural bilingual education policy at the Ministry, although a national programme for intercultural bilingual education has been in operation since 1996.

The recognition of the needs of indigenous students is relatively recent in Chile: the 1993 Congress passed the indigenous law, *Ley 19 253* (the *Pueblos Indígenas* had supported the *concertación* in 1989 on the basis of a minimum programme to address their needs). The law of 1993 recognises the need to have intercultural bilingual education and creates the corporation of indigenous affairs. Counsellors in the corporation met with the Minister of Education in 1995 and urged respect of the law. In 1996 the programme of bilingual education was launched. At present, this programme is funded with more resources than the national programme of literacy, the programme to support rural schools and the P-900.

An interesting intervention the mission could identify to explicitly help all Chilean students develop an appreciation for their indigenous heritage was a product of the *Enlaces* programme, a computer-based educational software – *Pueblos Indígenas en Chile Pre-Hispanico* – which provides information on Pre-Hispanic people. Another computer programme designed by the intercultural education team and the *Enlaces* team was a programme to facilitate the acquisition of the Aymara language (*Recurso didáctico digital orientado a introducir la Educación Intercultural Bilingüe en las Escuelas Básicas de Chile y más específicamente a apoyar el fortalecimiento de la Lengua Aymara, en alumnos del Nivel Básico 1 de la Primera Región*).

Other positive initiatives in this area include two programmes to prepare bilingual teachers at the Universidad Católica de Temuco and at the Universidad Arturo Prat in Iquique. These are run by experienced staff who are knowledgeable with the circumstances in schools with a large cohort of Mapuche children.

The programme of bilingual and intercultural education is implemented through a three-pronged strategy:

- Support of bilingual and intercultural education in 150 schools.
- *Programa Origenes* – a programme to revitalise 162 schools as part of a larger Inter American Development Bank (IDB) funded programme to support the development of indigenous communities.
- Programme of indigenous scholarships (*Becas Indigenas*) – 28 301 scholarships each year to indigenous students in basic, secondary and tertiary education (see Table 21).

The literature describing these programmes states that their focus is intercultural, fostering the development of common objectives of the national curriculum among indigenous children as well as focusing on objectives specific to the intercultural competencies and to the objectives to develop an indigenous identity. Currently, there is no curriculum of bilingual and intercultural education, although this is a goal to be achieved over the next two years. There are at the moment local proposals developed by groups of teachers and indigenous communities.

Other actions included in this policy are campaigns to foster local participation with regards to intercultural education. At the moment there is a national competition of indigenous stories, which is expected to lead to the publication of storybooks based on indigenous culture and traditions.

A goal is to support the professional development of 1 000 teachers involved in the schools targeted for bilingual intercultural education and the initial education and graduate training of specialists in intercultural education. This action is being implemented in collaboration with two regional universities and with a Master's degree programme in Bolivia. To date 50 teachers have graduated as bicultural intercultural teachers and 7 have graduated from the Master's programme in Bolivia.

Other areas that the national co-ordination is working on include development of instructional materials, supporting applied research, a system of

assessment and monitoring of the programme, support to local initiatives as part of the programme of school improvement, using ICT and educational television to disseminate intercultural programming, adult education and fostering social participation of parents in schools included in the programme.

Table 21. **Scholarships for indigenous students, by education level, 2002-2003**

Level of Education	Year	
	2002	2003
Basic	12 984	15 853
Secondary	7 868	8 942
Higher	3 218	3 506

Source: Personal communication. Guillermo Williamson. National Co-ordinator Programa Nacional de Educacion Intercultural bilingue, 2003.

While access to tertiary education has increased significantly in Chile since 1990, it has increased more for students in the upper quintile. Access is extremely skewed towards the richest students, a function of the fact that access is determined principally by performance on an entrance examination and the ability to pay for higher education (see Chapter 6). The best predictor of performance on this test is socio-economic group of origin of the students. The principal policy instrument to support equity in access to tertiary education are partial scholarships which are also awarded based on performance on this test. The number of beneficiaries of university loans grew from 73 554 in 1989 to 113 263 in 2002 and the number of scholarships grew from 0 to 60 196 for the same period.

As the economic returns to higher education have increased in the past thirty years and are actually enormously high in Chile (see Chapters 4 and 5), it is evident that this situation will lead to worsening inequalities that will perpetuate inequalities of origin of the students.<sup>92</sup> Unless the government finds effective and substantial means to alter the social distribution of access to tertiary education to increase the chances of students whose families are not among the wealthiest 20% of the population, high school graduates in Chile and their families will soon realise that they have been excluded from the opportunity to learn at the level which matters most for economic and social

<sup>92</sup> According to estimates of the *Centro de Estudios Publicos* private returns to investment in each year of college (based on the incomes of those with college education completed compared to the incomes of those in the labour force with secondary school completed) have increased from 13% in 1960, to 20% in 1970, to 24% in 2000. At the same time the returns to secondary education declined from 19% in 1960 to 10% in 2000.

advancement and for political leadership. This realisation, if widespread, can undermine the legitimacy of a democratic State.

Access to higher education does not take into account socio-economic origins of the student, or whether students are of Mapuche descent. Senior policy makers that met with the review team believe that it is not politically feasible in Chile to use quotas or any alternative way to govern access to higher education.

In the case of higher education, the team noted the risk that the selection and financing mechanisms of higher education can further fragment an already highly segmented higher educational system. There are 25 long-standing prestigious universities in the country that are overseen by the Council of Rectors and that have defined standards and put quality assurance measures in place. But there are many more universities in the country, that do not belong to this Council of Rectors and that remain unregulated by the “regulation” exerted by free market mechanisms. All universities in Chile are universities where students pay tuition. However, only the prestigious universities have scholarships and loan mechanisms. These are the universities that are attended by the highest income levels (top 2 quintiles), whose students correspond to those that achieve well in a nation-wide admission examination that practically determines not only where but also whether one can obtain a tertiary-level education. Since students are coming from a basic and secondary education system that is certainly unequal, those with greater possibilities of attaining high scores in the admission exam are also those students who are able to attend the best schools in primary and secondary, and who, as can be seen from Tables 12 and 13 in the Background Report, also belong to the higher income strata. These are the ones that can get scholarships and subsidised loans from the government. The others are more diverse in their socio-economic origin, but rarely part of the lower two income quintiles (only 28% of the university age population attends tertiary level schools) and must be able to pay for a very probably lower quality higher education. The team has noted the importance of the law now being discussed in Congress that allows for students in these other universities to also obtain loans – commercial and expensive – with collateral provided by the government, together with a mechanism for quality assurance of the eligible universities. Nevertheless, the question of equity in higher education needs be studied further and more radical measures, including academic and financial ones, to stop segmentation and improve equity in access and completion rates.

A final word regarding educational research: Chile has a strong tradition of high-level socio-educational research, and to less extent, pedagogical research, dating from the 1960s. Research inputs have proven to be an important tool for

educational reform and policy making. During the military regime, Chilean researchers were strongly involved in action research that emphasised the problems of important groups of population, especially in poverty areas, that were having access difficulties or receiving poor-quality services, and for expanding knowledge on educational processes. International co-operation made these action-research programmes possible. Educational reform since the return of democratic rule was indeed accelerated by the fact that the research centres had developed strategies, programmes and materials for effectively offering quality education to poor sectors in the country. Many researchers were hired by the Ministry of Education during the 1990s in order to put many of their already tested suggestions into place or to scale them up. This allowed for their involvement in the reversal of the most critical aspects of the effects of the military market-led and privatisation-centred reform.

Paradoxically, the democratic government has not sufficiently valued the role of educational research as a knowledge-building mechanism and as a critical input into educational reform. Research has become highly instrumental to narrow evaluation purposes placed as conditions for multilateral bank loans. Research has thus largely become consulting. International co-operation retreated from Chile with the arrival of democracy, and as a consequence, long-existing research centres are having serious difficulties surviving and those that are doing so are dedicating most of their energy to instrumental research projects. The percentage of the educational budget dedicated to research is extremely low, taking into account the built-in capacity of Chilean educational research. The team considers that prevailing policy regarding educational research would merit revision. Independent (non-instrumental) research offers invaluable critical inputs to educational reform and tends to deal, among other things, with equity issues that could monitor progress and identify hurdles and difficulties for achieving equity objectives more effectively than the Ministry itself.

### **The view from the classroom. What do students learn in Chilean schools?**

The review team was favourably impressed by conversations with students at several levels of the education system. They are articulate and self-confident, speak favourably about their schools and teachers, and appear eager to learn. They engaged easily in conversations with members of the review team. In rural schools in Nueva Imperial, south of Temuco, the review team had lively conversations with Mapuche children who were proud to share their school work in language and mathematics, read samples of their own writing, tell stories of Mapuche heroes, sing songs and recite poetry reflecting their cultural heritage and engage easily in learning new content in these subjects.



Similarly impressive were secondary school students in a research methods class using the computer labs in a publicly subsidised private school in Temuco. They were investigating topics of their own choosing, using the Internet to access information, and using basic word processing and presentation software to craft their projects. They spoke easily and eloquently about their research projects and seemed happy and engaged on their research tasks.

In a focus group discussing their histories in learning to read and write, grade 8 students in a language class in a municipal school in Concepción engaged quickly to the task and exhibited the ability to reflect on their experience and to communicate easily with strangers.

In discussions about the reality they observed in their practices and about the adequacy of their own training students in schools of education in Temuco (Universidad de la Frontera) and Concepción (Universidad de Concepción) displayed keen critical thinking skills and the ability to talk articulately and passionately about their profession.

That Chilean teachers and the education system are able to create conditions that support the development of such skills and dispositions is impressive, particularly as those were observed by the review team among students in rural as well as urban schools, among girls and boys, among children of indigenous origins, among *mestizos* children and among white children.

In spite of these favourable learning outcomes and conditions the team found the language curriculum in practice to be weak in supporting high level language reading and writing skills. There appears to be an insufficient emphasis in the development of pre-literacy skills prior to grade 1, a practice inconsistent with current research on ways to support early literacy.<sup>93</sup> In first grade, students spend most of their time copying single letters, with a strong emphasis on calligraphy. In second grade they begin to read short words. In the fourth grade they have to write short answers – two or three sentences – to questions in their books. In the seventh grade they write two-page book reports 10 times a year. When asked what their instructional goals for language were in the early grades, teachers provided fuzzy answers that could hardly direct instruction. In all grades teachers say that their goal is to teach their students to read and write but there are no indications of grade appropriate specific milestones for each grade. Also absent from the curriculum as interpreted by the teachers is a recognition that children in a given class can have different levels

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<sup>93</sup> Snow, Burns and Griffin (eds.) (1998).

of reading literacy and that instruction should support improvement accommodating those differences.

The understanding of teachers about the purposes of the language curriculum reflect in part the focus of the official curriculum during most of the decade, the focus of the textbooks, as well as the focus of the professional development activities conducted to support curriculum implementation and to support language teaching in the most marginalised schools. It should perhaps thus not be surprising that by the age of fifteen, Chilean students achieve at relatively low levels in international comparisons in reading, mathematics and science.<sup>94</sup> Recognising these limitations, the Ministry of Education has recently developed new curricula in language and mathematics that have more specific learning objectives and milestones for each grade level. The new language curricula have also a renewed emphasis in phonics as opposed to whole language approaches to developing literacy. To date, the principal instruments to support the implementation of these changes have been the publication and dissemination of the actual programmes as well as the publication of a booklet for parents intended to share with them general information on the importance of supporting literacy with activities at home and specific information about literacy milestones that children should be attaining at each grade level. The new didactic guides for teachers, however, are still rather general in the guidelines they offer. For example, the language guide for grade 1 – a print rich and poorly designed and unattractive text – states that the purpose of the language textbook is to develop an instrumental use of the language in listening, speaking, reading and writing, facilitate contact with literature and allow expression of the inner world reflected in creative exercises.<sup>95</sup>

An issue that several classroom teachers mentioned as a growing concern was the emergence of classroom climates characterised by poor social relations among students. In some instances this led to overt forms of violence among students, in other cases this led to poor learning environments where teachers had to spend an inordinate amount of time in classroom management practices, to the detriment of instructional time. Teachers attributed these changes in the social climate of schools to the fact that students spent too much time watching television, without adult supervision, and to the poor quality of TV programming. The review team did not observe these forms of disruptive student interaction, although in the urban schools visited large class sizes

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<sup>94</sup> OECD (2003).

<sup>95</sup> Ministry of Education (2003c), p. 5.

inevitably resulted in varying and highly inconsistent levels of student engagement.<sup>96</sup>

### **Looking at policy from the vantage point of the school**

The primary emphasis of the reforms of the last thirteen years has been in attempting to improve the general quality of the education system. The theory of action of these efforts was that teachers had the necessary capabilities to improve their teaching, and that quality would improve as a result of continued structural conditions that subjected educational institutions to market forces (the reforms of the 1980s), monitoring student achievement and introducing some incentives for teachers to improve their teaching – recognising groups of teachers whose students had higher learning outcomes. These structural reforms were combined with changes in the intended curriculum, with the provision of textbooks and instructional materials reflecting the new curriculum and with workshops to disseminate the new curriculum. This approach to change was based on two prevailing views among policy elites in the early 1990s, one view espoused that teaching would change as a result of providing teachers with resources, textbooks, materials, computers. These were perceived as *presiones fácticas* (*internal faction pressures*) for change. Another view espoused that professional development was needed to help teachers improve their self-esteem, opportunities for professional exchanges and fostering innovation at the school level. This is the view that prevailed in the workshops organised by P-900 and the rural micro-centres.

In tandem with these changes was a reform of initial teacher education that followed a similar theory of action. Funds were made available to universities to revise their curricula on a voluntary basis. The intervention and support from the Ministry of Education in structuring the nature of these reforms was also minimal (See chapter 2).

Other policies used to improve quality included developing a new teaching statute, increasing the salaries of teachers, extending the duration of the school day, and providing additional resources to teachers such as a high quality magazine published by the Ministry of Education.

The free textbooks provided to three million students per year in grades 1-12 and their 95 000 teachers – 2-4 textbooks per student – are one of the principal instruments to support the implementation of the curriculum. The

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<sup>96</sup> For a systematic analysis of student engagement in Chilean classrooms, see Marshall, Gove and Carnoy (2003).

Ministry of Education distributes these books in publicly subsidised schools. In the rural schools visited by the review team all students (in theory) receive these books and are allowed to take them home. Textbooks play a very important role supporting literacy acquisition, as they are one of the few printed materials available to children. In urban schools, however, there appear to be problems with the distribution of the books, many schools receive them in insufficient numbers and as a result they do not distribute them to students or they use them only in the classroom. There have been critiques in the past of the primary school textbooks,<sup>97</sup> but it appears that there have been important improvements in textbooks since the mid-1990s. As from 1997 the Ministry has wholly revamped its evaluation procedures for the acquisition of textbooks, doubled the public budget for this purpose, and consistently improved their quality.

In contrast to these principal approaches to quality improvement, one innovation designed to introduce information and communication technologies in schools followed a radically different approach. It did not assume that teachers had the necessary pedagogical skills to develop this new form of literacy among students, and therefore relied on much more explicit support and prescription in implementing ICT in the schools.

The change model of the *Enlaces* project was a research and development model that was scaled up rapidly, based on a support structure that by 2003 comprises 24 universities that train teachers and provide long-term technical support to each school in the *Enlaces* programme. A centre for research and development was established in the Universidad de la Frontera in Temuco, the poorest region of the country. This centre (Instituto de Informática Educativa) was staffed with highly trained specialists in different disciplines and today it acts as a think tank for the Ministry of Education researching new technologies and experimenting new ways to use ICT in the classroom, keeping permanent contact with international academic networks.

The review team was favourably impressed with the implementation results of this project in the schools it visited. In rural schools a couple of computers and a kit of programmes were available to students and teachers. The review team saw students follow lessons in language and mathematics, use

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<sup>97</sup> “Nevertheless, Chilean textbooks are poor to foster literacy and readers. Reading material is very limited and poorly selected; as a result, the books cannot foster reading proficiency or a love for reading. Our children have significantly fewer pages to read than children in other countries. In a language text a German child reads in a year the same number of pages that a Chilean child reads in all of basic education,” Eyzaguirre and Fontaine (eds.) (1997), pp. xii, xiv.

programmes to learn about musical traditions and instruments of Mapuche culture, and students' folders also exhibited workout sheets extracted from the programme suite. The team had no opportunity to establish what proportion of time students spent in these activities, how teachers integrated the use of computers into their instructional objectives and strategies and how access to computer use was distributed among students. As noted earlier there are problems in that the intensity of access to computers and to Internet appears to differ for students in urban and rural schools.

Nevertheless, the educational software students used seemed to provide structured learning opportunities to learn subject matter and to develop literacy and math skills. One of the programmes in the suite, *Clic*, is a platform that allows teachers to design lesson plans. There are many lesson plans available on the web-site in Spain in the institution where this programme was developed. Most of these have been produced by teachers in Spain. The team observed one lesson plan developed in Chile with this application to help students recognise the musical instruments of the Mapuche culture. Given the context in rural schools, the opportunities made available to students by the *Enlaces* project seem to provide relatively high value-added learning opportunities.

In urban municipal and private subsidised schools, the team also saw ICT being used. In urban schools, students work in computer labs, not in their classrooms. There were also dedicated ICT teachers working in these labs. Computer use and supervision varied greatly, from unsupervised first graders playing with arithmetic programmes, but not being able to understand what the programme demanded to fourth graders "chatting" with their friends in the same room to highly supervised ninth graders in a vocational school using English learning software to eleventh grade students in a private school in Temuco using the Internet to write reports and access information to develop a research project reflecting a personal interest. In this last, most creative case (in a selective subsidised private school), the instructor explained that computer instruction provided an opportunity to introduce a different pedagogy, one based on self-directed learning where the teacher provided guidance rather than direct instruction and knowledge. The instructor explained that it was not easy to do this because this approach was at odds with the culture of teaching in the school and in teacher education institutions. The students seemed to be actively engaged in learning and enjoying doing bibliographic research on the Internet and crafting their presentations. Relative to the low level of the written student work that the team observed in the same school, the opportunities created by the *Enlaces* project significantly enhanced the learning environment for students.

Thus, in select schools, such as the private subsidised secondary school the team visited in Temuco, upper secondary school students in relatively small

classes are using ICT in creative ways with more creative teachers. In other urban schools serving marginal populations, children have relatively little access to computers, they use packaged programmes or “chat” on the Internet among themselves, and there is relatively little supervision and not much creativity. That said, in one or two schools the team visited, the packaged drill software the team observed children using was better than the quality of the teaching they received.

Another source of support of overall quality improvement, developed in partnership with *Fundación Chile* (a public-private foundation for innovation), is the website ([www.educarchile.cl](http://www.educarchile.cl)). This is a state of the art portal with usable information presented in ways accessible to teachers, parents, administrators, researchers and students. There are lesson guidelines provided to teachers to cover specific curriculum objectives, and those teachers who have access to Internet and use this tool can download these guidelines and worksheets to prepare their lessons. This portal already has over 50 000 teachers subscribed and more than 2 million visits per month (winter 2003).

Since 1997 the team at the Instituto de Informática Educativa is also supporting a pilot project of community centres in informatics to make ICT accessible to marginalised communities in the region of the Araucanía (there are 31 community centres installed). The aim of this initiative is to empower these communities with ICT, including the sectors of education, commerce and health. Based on this early experience, in 2002 the Ministry of Education decided to expand the concept to the rest of the country as part of the ICT literacy campaign of the Government. The expansion considered the use of *Enlaces*' schools as access point for the communities and provides training available to adults as well as access to ICT for all the community. To date 15 000 adults have participated in programmes in these centres and it is planned to train more than 200 000 over the next two years.

### **Structures and management and equity**

The Chilean government is in the difficult position of having to implement educational policy relying on management structures that reflect the designs of the authoritarian past. As mentioned earlier, equity was not a priority objective of the authoritarian regime. Consequently, trying to foster equity within the current structures is not easy. In particular, the team noted weaknesses associated with the privatisation scheme, deficient capacity to make decisions at the mezzo levels and the role of socio-cultural traditions in shaping the implementation of policy.

## **Does the highly privatised basic education system work at cross-purposes with equity?**

Chapter 4 already discussed whether the educational reforms implemented since 1990 are running up against what could be called “structural constraints” to quality and equity. That Chile has made such impressive progress in the reform of education despite structural constraints is indeed impressive. Working within these “structural constraints”, the democratic governments since 1990 have managed to move somewhat toward greater equality of student achievement through compensatory programmes, as described above. The rapid expansion of secondary and higher education has also opened new opportunities to a limited group of young people from lower-middle and working-class families.

However, the general tide in Chilean education is pushing hard in a different direction. Privatisation is not only a very important reality of the educational system in Chile, but a phenomenon that continues to grow. The private sector in education is a major force to reckon with within the system. The review team asked itself whether educational reform in Chile has not reached the ceiling imposed by these structural constraints, so that effects on equity that were clearly visible during the early stages of the 1990s reform (enrolment expansion at all levels, decrease in wastage rates, documented results of targeted programmes and positive discrimination measures) are becoming fewer and less identifiable, and whether structural constraints are not imposing a limit on future results of reform measures in this domain.

The review team believes there are some indications that this may be the case. Among those indications that structural constraints are operating are the following:

- The basic and secondary education systems continue to be highly segmented with considerable inequality of educational results. Although the value-added (test scores adjusted for socio-economic background) differ little among municipal and private subsidised schools, within the private subsidised sector, more elite religious schools are clearly differentiated by test score, socio-economic background of students, and fees paid, from municipal schools and the non-religious private subsidised “for profit” schools more likely to cater to lower middle class and lower socio-economic class students. The important point is not whether the value-added differs that much – it does not – but rather the fact that the educational system is consciously class structured. It claims that there is free choice for parent to choose the schools they want for their children, and this

allegedly produces the greatest good for the greatest number, but in practice, selectivity by schools and an emphasis on “choice” produces a highly stratified system in which there is increasing concentration of children in schools with children from like socio-economic background. This is especially true at bottom 20% of income earners and the highest 20% of income earners. As Table 22 shows, in basic education (K-8) 65% of students from families with the 20% lowest family income went to schools averaging the lowest 10% of family income. At the other end of the spectrum, 80% of pupils whose families were in the highest quintile of income attended schools in the highest 10% of family income. At the secondary level, the corresponding figures are 58% of students in low income families attending the lowest decile schools and 98% of high income students attending the highest decile schools.<sup>98</sup> Democracy is not served by such intense stratification.

- The rules of the game are different – and unjustly so – for municipal and private schools. Private schools can both select and expel. Municipal schools – with the exception of the few prestigious ones that are in high demand – are obliged to accept all students asking for access. Under these circumstances, results can be expected to differ in favour of private subsidised schools. That they do not do so except in the case of more elite selective private subsidised schools is an indication of the quality (value-added) potential of municipal schools at all levels. In the view of the review team good schools are those who can teach all students, not select those who need little help.
- Conditions favouring segmentation between municipal and privately owned subsidised schools have actually increased since the democratic government came into office. In 1993, privately owned subsidised schools were allowed to charge fees, and subsidies diminished less than proportionately. This is clearly an avenue towards greater privatisation of education – the burden on private expenditure on the part of the families is greater. But it also explains why the social composition of municipal and privately subsidised schools is becoming increasingly differentiated. If privately subsidised schools are viewed as offering a better education or at least the opportunity to mix with higher socio-economic background students, parents with a little more income will tend to send their children to these schools, which is the principle behind free choice. Free choice is

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González, Mizala and Romaguera (2001).



a very sensitive issue in Chilean society, and the Ministry should respect the principles of an important part of the Chilean population regarding the right of the family to choose the education it wants for its children. However, free choice cannot become a cause of inequality. When it does, it begins to impact the underlying democratic values and institutions of society.

**Table 22. Chile: Distribution of students in basic education by family income of individual student and average family income in school attended, 1996 (%)**

Decile of Average Family Income in School Attended	Decile of Family Income of Individual Student									
	I	II	III	IV	V	VI	VII	VIII	IX	X
1	44.4	20.8	10.3	4.8	2.1	15.6	1.1	.4	.2	.2
2	31.8	23.5	14.5	8.8	3.5	13.0	2.6	1.1	.7	.5
3	25.1	20.7	16.1	10.8	6.9	12.0	4.6	2.3	1.0	.5
4	19.9	18.7	16.7	12.6	8.4	11.3	6.3	3.6	1.8	.8
5	14.6	15.5	15.7	14.4	10.9	11.5	8.6	5.2	2.6	.9
6	10.3	12.6	14.2	14.4	12.5	9.9	11.4	8.7	4.5	1.4
7	5.8	8.6	11	13.6	12.7	9.6	14.7	13.0	8.3	2.7
8	2.4	4.5	6.8	10.1	12.2	8.1	15.9	18.6	5.7	5.6
9	.7	1.5	2.4	4.3	8.1	6.7	11.6	19.4	6.9	18.3
10	.1	.1	.1	.4	6.4	8.0	1.5	3.5	4.4	65.4
No data	1.0	1.2	1.8	1.5	19.8	68.0	1.7	1.7	2.1	1.2

*Source:* Gonzalez et.al., 2001. The information on the sixth decile of family incomes is affected by 68% missing information in that group.

For the reasons mentioned above, the team recommends that Chilean educational policy makers take a hard look at the underlying policy structures that contribute to the increasing educational segmentation of Chilean society. The paradigm of the last twenty years has included a particular definition of efficiency in educational delivery which has produced a marked tendency toward educational and social segmentation. This affects democratic values and institutions and may constitute a “drag” on major gains in student learning.

The team also suggests that the strong points of municipal schools for serving poor children be studied further, and strengthened.

## The administrative weaknesses

The administrative weaknesses of the regions and municipalities and the functional ambiguity in the division of responsibilities across administrative levels undermine more effective delivery of quality education to socially marginalised children.

In spite of the radical decentralisation represented by the privatisation of education carried out in the 1980s, but consistent with the authoritarian culture developed over the seventeen years of military rule, many educators in Chile consider that the system reflects an authoritarian culture that allows only limited opportunities for decision-making by parents or even mid-level political organisations. Perhaps this expresses an issue that surpasses the institutions of education, even if it also affects them. The June 2003 editorial of a magazine established by Fr. Alberto Hurtado and with close ties with Catholic intellectuals focused on the need to deepen democracy in Chile and criticised the fact that most political decisions are currently made by very small groups of policy elites, in secretive ways and with limited input from the public or from intermediate organisations. The editorial attributes these authoritarian politics to the current Constitution.<sup>99</sup>

The ministerial secretaries face legal and administrative regulations that to a great extent limit their decision-making ability. In several provinces visited by the review team, they indicated that most education policy decisions are made in Santiago and that Santiago officials are largely insensitive to feedback to modify the policies to facilitate adjustment to local realities. The underperformance of Mapuche children was attributed by local education officials to the limited room they had to put in place programmes that would better support the academic success of these students such as bilingual education or more resources to support specific school improvements. The Mayor in Temuco shared this view that feedback from the mayors had no impact in ministry officials in Santiago. He also explained that in his view most in-service teacher education projects were ineffective in altering pedagogy and that the Ministry of Education had been totally unresponsive to numerous representations of this problem.

The Ministry appears to be very careful in its dealings *vis à vis* both municipalities and private owners. This is so despite the Ministry's responsibility for the whole of the reform process, and the Ministry's normative

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<sup>99</sup> "Mas y Mejor Democracia", editorial *Revista Mensaje*, No. 519, June 2003, Santiago, pp. 4-5.

role in orienting content and the pedagogical and the management aspects of education. The review team also noticed a weakness of the mezzo-structures: regional and provincial educational offices, which seem only to administer the educational mandates of the central government.

At the same time, the municipalities are very heterogeneous. The leap from the Ministry to the municipal level, with a mezzo-structure that has no decision-making faculties, seems large and, more dangerously, unequal. Municipalities differ in their capacity to administer educational resources. They differ in their interest in education and in the capacity to identify problems and design solutions. They show discretion in their decisions regarding investment in infrastructure, but particularly in the allocation of human resources. What is perhaps more serious from the point of view of equity, they do not all assume equity as an important criterion for the administration of education in their municipality, or at least not all of them do so with the same degree of importance. Mezzo-structures seem to have very little to say regarding these differences and the discretion municipalities show when they make decisions for allocating resources and for insuring educational inputs reach all schools equally.

The team believes that the structure of the Ministry, including the strengthening of the role of mezzo-structures and the relationship with the municipalities, should be revised. It is important for functions to be clear, for the Ministry to be able to take normative decisions, apply them and supervise and sanction their implementation without having to tread softly, and for the municipalities to know what decisions they must make, under which criteria, and with what accountability measures. The team suggests the need for mezzo-structures to be strengthened so that the functions of the Ministry mentioned can be fulfilled. Also, the flexibility that any educational system needs can be mediated, supported and implemented by these regional and/or provincial mezzo-structures which are already in place, but whose functions must be clarified and strengthened.

### **Social traditions**

Social traditions mediate the implementation of policy and reproduce an unequal past. Long established Chilean traditions of authoritarianism and male domination are the context within which schools operate. For example, even as teachers work hard to foster the academic success of girls as well as of boys, the opportunities available to each gender speak louder than the contents of the books or the lectures of teachers. Some of these are the different opportunities for advancement faced by female and male teachers. Chile is the most inequitable of all education systems in Latin America in the percentage of

female teachers that are promoted to the position of principals. In a survey conducted by UNESCO in 1998 among teachers and students in the third and fourth grade, 82% of the Chilean teachers were women, but only 44% of the principals were female. By contrast, there was almost gender parity in the opportunities for men and women to be principals in neighbouring Argentina, Brazil or Paraguay.

Conservative local norms and traditions also play a role undermining the ability of the education system to serve the most disadvantaged. For example, in one rural area the team visited two schools, each with six grades, one with only one teacher and the other with one full time teacher and one part-time teacher. One was a municipal school. The team saw little evidence of teaching to high standards and rote learning and memorisation of facts dominated the student presentations. The most exciting learning opportunities appeared to be those associated with using the computers provided by the *Enlaces* project. The teacher's views on the children and the community emphasised how the traditions of the parents and problems with poverty and alcoholism, prevented him from doing better work. He showed the team attendance books noting the high rates of absenteeism, around 50% during the month of the visit. This teacher explained that because of his entrepreneurial spirit he had set up a private school nearby – that could be seen from the municipal school – which was run by his son.

The team then visited a private subsidised school in the community, located less than 5 kilometres from the first school. The team was more impressed by the engagement of students in academic tasks in this school and by the clearer sense of purpose of the teachers. While they too recognised that the surrounding environment was depressed because of high unemployment, they took this as a challenge upon which to build an academic culture of high expectations and meaning for the children. The team asked the teacher why parents did not transfer pupils from the other school (the private school charged no fees). She explained that they had heard about the differences between her school and the other but that she did not encourage transfers as they all had to live together in this community. When the review team asked the mayor how he managed personnel he explained that there were large rigidities in the management of human resources and that it was politically very costly to fire a teacher, even in the face of evidence that the teacher was not performing up to standards. In addition, the labour law in the *Estatuto Docente* makes it virtually impossible for a mayor to fire a teacher who is not performing adequately. The result of this peculiar combination of norms and practices is a culture that is not responsive to the preferences of parents, that is not focused on student opportunities to learn, that appears to be insensitive to input from entrepreneurial teachers or mid-level managers. Rather, the public system (and

to some extent, the private school system as well) is complacent with mediocrity and with the *status quo* because the incentives and sanctions that exist are not intended to rock the system.

Several provincial and municipal administrators referred to the fact that faced with budget deficits municipalities were not transferring the salary incentives intended for rural schools. Others were apparently meeting these deficits with the funds intended for the pension funds of teachers. These practices suggest that the fragmentation of the education system into multiple administrative units has compounded the potential for administrative inefficiencies to creep into the education system. At the same time the mission saw no evidence of the benefits that one could presumably expect from decentralising decision making authority to local elected officials (mayors) or to parents.

Nowhere is the large role played by broader societal values and institutions in mediating the implementation of education policy more apparent than in the policies aimed at improving the opportunities of students of indigenous descent. Consequently, nowhere is the gap between policy rhetoric and implementation larger. Whereas the team observed a few positive examples of real opportunities for indigenous children, such as the better rural school, or such as the software programmes designed to celebrate Mapuche heritage and the school work that celebrated Mapuche traditions, it also observed numerous examples of a culture that accepted all too easily the tracking of Mapuche children into dead end educational options.

One educational administrator in the IXth Region referred to the challenges faced by Mapuche students repeatedly. He explained that there was a growing number of Mapuche high school graduates who had the necessary scores to pass the university entrance examinations, but who did not have the economic means to pay for tertiary education. The number of scholarships available to support these students was extremely limited and not growing. He said “this is an issue that is politically explosive. It is only a matter of time until these students realise that they have the skills and the desire to be college educated but that they live in a society that denies this opportunity. I can’t understand how our political leadership does not see this.” When pressed to explain why there weren’t more initiatives focused on college access of Mapuches he expanded “I often think that deep down we don’t really believe that Mapuches have the same rights as other people. *Aqui a nadie le important los Mapuches, y en Santiago menos.* No one will tell you this openly, perhaps we’ll admit this among very close friends, but I think that is the real reason why they face such poor odds.”

The view that many highly educated individuals were relatively indifferent to this issue was confirmed by the administrators and teachers of a high school for indigenous students, described below. They explained that most university graduates in Chile have very limited sensitivity towards the indigenous theme.

Just as troubling as the features of potential racism that can be observed in Chilean dominant culture was the fact that some of the very institutions designed to support the success of Mapuche students appeared to be preparing them to assume subservient roles in society. The review team visited a private high school, run by the Catholic Church, selected as one of the anticipation high schools (*liceos Montegrande*). The managers and teaching staff of this high school said it represented the vanguard of intercultural education in the country and that a good proportion of their students were children of Mapuche leaders. The team was as impressed by the high quality of the facilities as it was unimpressed by the quality of the instruction observed and by the low academic skills demonstrated by the students. In this high school students were trained to be “assistant pre-school teachers”, “assistant nurses” and other similar occupations. No one among the staff was able to explain what the demand was for such occupations, nor what level of wages those graduates would command. It was made clear that the focus was not to prepare students for college entrance.

Amidst a rhetoric of teaching students to be proud of their native language and cultural heritage and to develop self-esteem the team found a school culture of low academic expectations where students were engaged in low-order cognitive tasks – the review team found students in the track of assistant pre-school teachers engaged doing handicrafts, and one class of students of assistant nurses playing and talking with each other as the teacher devoted his time to talk to four of them in a corner of the classroom. The team interviewed a former teacher of this school, a Mapuche woman with a Master’s degree, who was very open in her criticism of the school. She said: “I know this school very well for I worked there seven years. Like the rest of the few Mapuche teachers in that school, it pained me to see that we received the brightest Mapuche children and condemned them to occupations without a future. Once some teachers in the school proposed creating an option to educate maids, the argument being that so many of our graduates ended up as maids in Santiago. I was furious and opposed it... I went to the newspapers. Eventually I was pushed out of the school... The option to educate maids was not approved after all but I suppose it makes no difference, that’s what many of the graduates of this high school end up doing anyway.” In the opposite direction, the Ministry informed the team about the academic success of an Aymara secondary school (Kuyasapu) in the Andean North, which substantially improved SIMCE results between 1997 and 2001 and is academically oriented. In Antofagasta, the team also visited a

school that had organised an impressive exhibition on indigenous culture which drew spectators from beyond the school community.

The team was surprised that policy makers hold radically opposing views to what the team observed in the field. Many of them deny that there are specific problems that limit the opportunities of Mapuche children. Those who recognise these problems explain that they are being adequately addressed by policy. It is clear that policy intentions are light years ahead of some of the implementation realities described to the team by educators in Temuco and what the team observed in the field.

## **Recommendations**

Support a multi-pronged high level policy initiative to revamp literacy instruction in Chile with emphasis on developing early literacy skills among children whose parents have low levels of education. This initiative would have several components: adult education campaigns using media to develop competencies among parents to develop phonological awareness, motivation to read, and oral expression.

It is the emphasis on equity as a policy objective that most clearly distinguishes the education reforms of the last decade from those carried under the 17 years of military rule. Chile's current leaders understand that in a democracy providing all children and youth the opportunities to learn at high levels are essential to the legitimacy of a democratic regime, essential to maintain an Open Society and an imperative of increasing economic productivity. The review team was impressed by numerous efforts to foster equality of educational opportunity in Chile. Where it not for these determined efforts the devastating effects of the pernicious reforms implemented by the autocratic rulers of the 1970s and 1980s would have further widened Chile's social divides and further placed the basic right to a decent education beyond the reach of poor families. The political consensus fostered by the democratic leaders that have governed Chile during the last decade on this issue is truly remarkable. Programmes such as the P-900 and the most recent critical schools programme, as well as the full-day school programme are visible efforts of the results of this political commitment to support the educational achievement of the children of the poor.

In spite of this emphasis, serious challenges to level the education playing field for all children remain in Chile. This is in part because cultural norms and traditions, as well as larger social and economic inequalities, support the reproduction of unequal education chances for different children. But it is also because most of the reform efforts of the last decade have focused on improving

quality and have addressed equity as a subsidiary objective. Among the most urgent imperatives to close equity gaps are deliberate efforts to eliminate secondary school dropout. As the democratic leaders of the nation continue in their pursuit of providing all citizens the skills and dispositions necessary to be democratic citizens, prepared to live fulfilling and productive lives, they will do well to deepen their commitment to equity as an educational objective, for this has proven to be the Achilles Heel of recent reforms in Chile and elsewhere. In what follows we make suggestions for short-term initiatives to persist in these efforts, while we recommend continued efforts to deepen and broaden the social commitment to the imperative of educational equity and to further develop long-term approaches to achieve it.

Review the language arts curriculum in all grades of elementary school so that there are clear instructional objectives that support a staged process of reading development.

Support research to:

- Describe instructional practices of reading instruction and that examines the impact of various experimental arrangements to develop the various blocks of reading proficiency.
- Identify the reasons why students in the lower income groups are less likely to be enrolled in school. If opportunity cost is an important determinant, expand scholarship programmes that allow low income students to stay in school.
- Design and implement a multi-pronged programme to increase college access among low income and Mapuche students. Conduct studies to assess whether students and their families understand factors determining access to college. Support programmes of academic preparation, comparable to those higher income families purchase to prepare their students to sit the exams, enrich secondary instruction in schools concentrating on students whose parents have low levels of education.

Conduct an Equity Audit of all programmes currently under implementation by the Ministry of Education. This audit would examine the impacts of the programme in equity, irrespective of the intended goals of the programme and would seek to identify opportunities to advance equity through reorientation in programme management.



Conduct beneficiary assessments of policies currently under implementation to support K-12 classes that specifically compare perspectives of low income parents with those of their upper income counterparts in terms of how they perceive the benefits of the programmes and that seek to identify opportunities for programme improvement reflecting the perspectives of low income communities. Concurrently conduct a needs assessments in marginalised communities, and particularly in Mapuche communities, that seek to identify pressing educational needs not currently met by policies in place.

## *Chapter 8*

### **CONCLUSIONS AND RECOMMENDATIONS**

This chapter focuses on general conclusions and recommendations.

#### **Conclusions**

For the past generation, Chile has acted systematically to improve student performance in school while greatly expanding access to secondary education. Since 1990, the principal strategies for achieving gains have been to focus on improving conditions in low-performing schools, to make high quality pedagogic materials available to all schools, to completely reform K-12 curriculum, to raise teacher salaries substantially in order to make teaching a more desirable profession, more attractive to “better” secondary school graduates, and to move toward a longer school day for all children.

More than any other country in Latin America, Chile has been able to sustain the reform process because of the political “accord” that prevails in a country that went through economic and social turmoil in the early 1970s followed by seventeen years of military rule.

The accord included the effort to combine two co-existing but ideologically conflicting reform policies. One is the notion that educational markets, with competition between schools, a high degree of parent choice among schools, and private management of schools, provide the best hope for educational efficiency and the highest possible student performance. The other is the notion that the central government must intervene in the educational system with a clear vision of what constitutes a good education and how to achieve it in order to assure that students will have the greatest opportunity to learn.

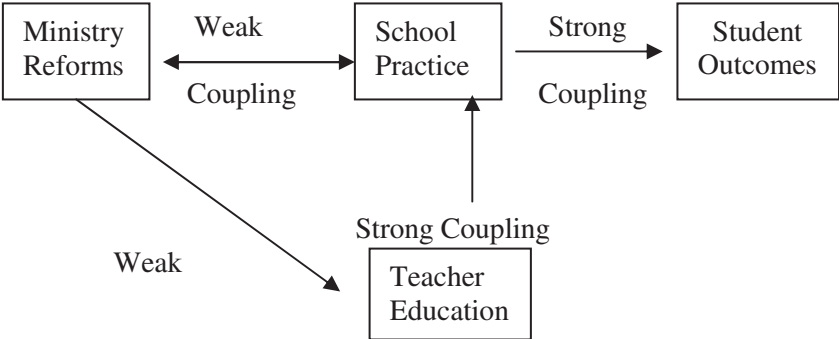
The result of this mixture is a reform model in which the Ministry of Education is an active interventionist in developing a relatively high quality required curriculum, setting requirements for a longer school day, and revitalising low performing schools, but schools and classroom teachers are responsible for implementing these reforms, and have almost total autonomy in

doing so. Furthermore, as in many other industries, the initial formation of the labour force for schools – primary teachers – is carried out independently of the Ministry of Education, which can only try to influence autonomous universities to train teachers up to standards inherent in the new curriculum.

Chilean education is influenced by an ideology that *gives undue weight to market mechanisms* to improve teaching and learning. Thus active interventionism from the centre in this respect is bound by market mechanisms to implement reform. These mechanisms, in practice, are generally weak stimulants for educational implementation or improvement, for a number of reasons. The most important of these is that there is inadequate capacity in the system to know how to respond to market stimulants in order to produce more student learning. Lack of instructional leadership and managerial capacity among school directors combines with lack of supervisory authority (even in private schools) to place most power in the hands of individual teachers to implement reforms and improve learning. High capacity teachers may be able to carry this off, but low capacity teachers cannot.

Figure 9 outlines the nature of this problem. Well-intentioned Ministry reforms are weakly coupled to actual school practice, because there is no supervisory/instructional assistance structure to ensure that the reforms are being implemented as anticipated in the reform programme. Further, teacher education is very important in influencing the nature of school practice, but Ministry reforms are weakly coupled to teacher education, so university preparation of teachers does not necessarily conform to the improved capacity required by Ministry reforms. Finally, school practice is important in influencing student outcomes, so the weak implementation of Ministry reforms resulting in little improvement in school practice results in little improvement of student outcomes.

Figure 9. Chile: Relations among Components of the Educational System



## Coupling

The OECD review team found much to praise in the progress of Chilean education in the past thirteen years. However, the team also found that in many, if not most, of the schools it visited, the vision and goals of planners and experts in the Ministry were not translated into the relatively high levels of practice called for by the reforms. The weak coupling between the reforms and initial teacher education helps create a major “capacity gap” in the teaching force. This puts most pupils in the country into classrooms with teachers who, through no fault of their own, have been inadequately prepared to teach mathematics, language, and other subjects at the standard required by the new Chilean curriculum. Large salary increases for teachers in the 1990s have begun to attract much higher achieving high school graduates into education faculties. But the teacher education curriculum in universities does not seem to be keeping pace in providing stronger subject matter preparation or linking pedagogical courses to the new curriculum.

The weak coupling of Ministry reforms to practice in schools also hampers Ministerial efforts. As far as the review team could tell, there is no legitimate, functioning supervisory/instructional expertise system with the capacity and authority to help teachers improve student learning; that is, there is no direct linkage between “expert” supervision and teacher professional development. Teachers are not systematically supervised and guided in their classroom practice by mentor teachers, school directors, or assistant directors. Even if they were, there would be serious issues with the capacity of supervisors as instructional leaders and interpreters of available data on student performance.

The issues of initial capacity building and the nexus of supervision-practice-standards-professional development are at the centre of the review team’s recommendations for moving the Chilean educational system forward.

The review team is sensitive to the importance of democratic values and to the concerns of teacher organisations regarding teacher autonomy. Reformers have relied on market mechanisms to provide incentives for teachers and school administrations to improve. Some critics of the system argue that well-informed parents should be the main force providing feedback to teachers and schools, that schools would be responsive to parent demands, and that this could be a major force to improve schools.

For many, consumer driven educational improvement is the most democratic way to enforce change. But there is little evidence that except

among highly educated parents, such a “supervision” system works, and even then, it appears to be full of flaws. In the real world of Chilean education, teachers are largely on their own in their classes, unsupervised either by knowledgeable parents or knowledgeable supervisors.

Until now there is no research that shows that the (SNED) produces consistent and sustained improvements in student performance. The Ministry must produce solid evidence for placing reliance on these kinds of incentives to produce school improvement. *The team’s recommendations, therefore, fall on the side of setting high, clearly defined standards, and improving the system’s internal capacity to implement those standards.*

The review team concluded that the shortage of teaching and supervisory capacity mostly affects lower income pupils, who have the least family resources to make do in an educational system that fails to meet high standards. Low income students pay the highest price for the faults of the system. The Ministry has done a great deal to improve schools for low income students since 1990, and the massive expansion of secondary school and university enrolment during this period has also contributed to increasing their educational and job opportunities. That said, Chilean education remains highly unequal. The review team found a number of ways that current interventions designed to reduce educational inequality could be strengthened and expanded.

The review team also recommends changes in parts of the secondary vocational stream and an expansion of subsidised loans for qualified lower income secondary school graduates. Secondary vocational and university education have been overtaken by their decade-long expansion; they need to adjust to new realities. Test scores suggest that a significant fraction of secondary vocational students from relatively lower income families is potentially more qualified than secondary graduates from high income families to complete university. Yet, because of financial barriers and lower family expectations, opportunities to enter and complete university are reduced. The review team recommends that the Ministry research this situation and take steps to rectify it.

## **Recommendations**

The review team’s recommendations that follow are divided by sections, according to the main themes in Chapters 2-7 of this report.

## ***Teacher initial education***

### *Short Term (1-2 years)*

Put increased emphasis on improving teacher capacity and instructional supervision – *i.e.*, focus on direct labour quality and organisational improvements as a main element in a strategy for increasing student performance.

The relationship established by the Ministry with the universities on the initial teacher education project seems to be improving teacher education. It is very important that this be built upon and efforts made to sustain and extend the reforms in initial teacher education. Explicit benchmarks and accountability should be introduced to speed up the reforms towards more explicit changes in the curriculum in practice, with more precise attention to teaching and learning and content knowledge. Greater capacity is necessary in subjects such as language, mathematics, sciences and social studies, in order to support implementation of the new curriculum. Teacher education must also be linked more closely to teaching the new curriculum. A possible extension of the support to reform schools of education should also explicitly encourage interaction and collaboration with other faculties in the universities, and with schools of education in more industrialised nations.

The career structure and incentives of staff in university education departments should be reviewed with the aim of rewarding innovation and entrepreneurship.

The reforms in initial education should deepen and extend practice for student teachers in schools, with good mentor teachers. The reforms should provide more opportunities to integrate what students observe and learn in their practice teaching with the rest of their courses. It is a matter of importance that more formal recognition and response be given to the school-based co-operating teachers for their involvement with trainee teachers.

### *Medium term (3-4 years)*

Institutions should introduce rigorous forms of evaluation of the theoretical and practice work of student teachers leading to certification which they are prepared to stand over, testifying to standard of training achieved by the students. Specifically, graduates should be tested on content knowledge and evaluated in terms of their ability to teach the required curriculum.

Quality assurance mechanisms need to be introduced to ensure that the standards of initial teacher education courses through distance education are of the required standard. Certification examinations would contribute to setting such standards.

Greater vigilance needs to be exercised regarding the category of “authorised” teachers, which, at about 10%, forms a high proportion of the teaching force. One of the two aims of national policy is quality; there may be slippage in this criterion with regard to authorised teachers.

Even if it is not possible at present to introduce a formal induction system for newly trained teachers, a reduced workload should be facilitated in the first year, with some designated support from the technical-pedagogic staff member.

More special education teachers and remedial teachers should be trained and available to public schools with large numbers of pupils with learning difficulties.

Greater efforts are necessary to attract to the teaching profession’s qualified candidates of Mapuche descent. Scholarships ought to be made available for talented Mapuche students to complete teacher training and so create a unique policy instrument to implement the inter-cultural, bilingual agenda.

### ***Teacher professional development***

#### *Short Term*

Promote the Master Teacher Programme (AEP) to help more teachers apply and succeed in achieving certification as Master Teachers. Employ these teachers in assisting other teachers to improve their teaching and as mentors for newly entering teachers.

Continuing support to teachers should move away from the more general forms of training that have characterised teachers’ workshops towards specific and more structured support to develop subject specific pedagogies and to help groups of teachers develop skills to teach specific subject matter to their students. In the very short term, intensive support should be given to teach literacy in basic education.

To help teachers use computer skills to integrate ICT into curricular practices, *Enlaces* should emphasise more specific guidance, provide exemplars of good practice, and operate hands-on workshops in such applications.

Consideration should be given to the Scholarships Abroad Scheme in its current format to assess whether its positive impact is worth the expense involved in relation to priorities for the policy of the continuing professional development of teachers in contemporary circumstances.

### ***Student evaluation***

#### *Short Term*

The Ministry should clarify the primary purpose of SIMCE to focus on student achievement as a measure of quality of education.

A comprehensive training programme should be put in place to improve the understanding of teachers, administrators and parents of what SIMCE measures and how they can use SIMCE information to develop improvement plans and improve classroom learning. This will involve reviewing how the current SIMCE results are reported to schools and what additional information schools may need.

Consideration should be given to setting school-based standards for student achievement as measured by SIMCE. These standards should establish common national benchmarks while taking into account the characteristics of various school populations. This standard setting should be supported with in-service training for teachers and administrators.

More extensive in-service training and professional development should be developed for classroom teachers to enhance classroom literacy assessment. Accompany this training with appropriate resources.

The Ministry should encourage greater ownership and use of the SIMCE data by enhancing the capacity of schools to access and analyse the information from SIMCE testing and surveys.

The primary measurement of the “state of the education system” in Chile is the SIMCE results. To diversify the measurement of “quality” of education and perhaps encourage a more complex public debate, the Ministry should consider identifying and reporting regularly on additional indicators of the quality of education. These could include, for example, retention rates for secondary schools, number of repeat students in elementary, graduation rates, absentee rates, percentage of full time and part time teachers, student/teacher ratios.



### *Medium term*

The Ministry should improve its method of evaluating student outcomes, so that student performance data are more useful for management decisions. The current method of national testing, while useful for some purposes, is not accurate for assessing the value-added in each classroom and each school. A better evaluation system would allow municipalities and the Ministry to identify schools and teachers that are doing consistently well with their students and consistently poorly. Without this information, there can be no checks and balances in the educational system.

The Ministry should reorient the timing of the current SIMCE to test students in grades 4, 8 and 10 in either even or odd years so that results can be used to measure the “value-added” of teacher and other school inputs in the last four years of primary school and the first two years of secondary school.

If standards are established, the Ministry should explore the possibility of also establishing improvement targets that focus on cohort gains and on closing the gap between low and high performing schools.

### ***Secondary education***

#### *Medium Term*

Highly selective vocational schools should reconsider their status as “vocational schools” and rethink their course offerings and their vocational orientation.

The Ministry should expand its compensatory programmes for low income students in the first two years of secondary education as part of an increased effort to reduce dropouts from secondary schools.

The Ministry should monitor the initial university education of secondary teachers in core subjects so that the ability of new teachers to teach the required curriculum is greatly improved. As indicated above under “Teacher Education,” a principal way to accomplish this goal is to require all new teacher graduates to take a certification examination with high subject knowledge standards.

The government (Ministry of Education or Ministry of Labour) should consider using secondary vocational school facilities to offer evening courses to workers from industry.

The institutions that are licensed to deliver the new vocational teacher education programme should commit themselves to the development of these facilities as key centres for the study of vocational teaching and learning.

The municipalities in consultation with the Ministry of Education and representatives from industry should agree on a set of performance indicators for vocational schools.

### ***Higher education***

#### *Short term*

The review team endorses current Ministry of Education efforts to expand voluntary accreditation of increasing numbers of universities and efforts to expand the student loan programme to private universities. Although the current accreditation programme is a mild form of quality regulation at best, it is a start. It is important that those private universities and technical institutes that participate in accreditation programmes (and which are accredited) have priority in access to student loan funding.

The Ministry should ensure that reasonably qualified students from low and middle income backgrounds, who could be successful in university, not be denied access to higher education because of financial barriers to entry. In this regard, the Ministry should conduct a systematic research study to determine the size of this problem by surveying a random sample of those students who take and pass the PAA (Academic Aptitude Test). How many of these students do not attend university due to financial constraints? What is the relationship between parents' income, test score on the PAA, and university attendance? Such research would enable the Ministry to estimate the degree to which expanded student loans and scholarships would serve efficiency and equity concerns.

#### *Medium term*

Together with universities, the government should create external boards that certify professionals above and beyond the current method of automatic certification through completing university degrees. Professional certification is especially important in education and health care.

To make expansion of student loans more viable and self-funding, more should be done to assure loan repayment, even through automatic pay deduction as part of the income tax system.

### *Longer term (5-6 years)*

University enrolment and graduation need to be expanded over the coming decade. The economic returns to university completion in Chile are among the highest in Latin America. At the same time, Chile subsidises university education with public funding less than any other country in the region. Chile must try to maintain quality in higher education as part of this expansion. Given the autonomy of the higher education system, and the large number of private institutions, this will require considerable innovation in “soft” forms of regulation and incentives to encourage higher education institutions to participate in quality control.

The Ministry should explore, with the universities, a move away from the current traditional system of an official list of 17 "learned professions," which are the monopoly of the universities, with course programmes of 6 years or so, and adopt the "Bologna" type of model, with shorter undergraduate courses followed by Master's degree programmes.

Efforts should be made to improve post-secondary technical education. As higher education continues to expand, increased numbers of students will continue their secondary vocational education at post-secondary technical schools. These should be upgraded and subject to accreditation.

### ***Equality of opportunity to learn***

#### *Short Term*

The Ministry should support a multi-pronged high level policy initiative to revamp literacy instruction in Chile with emphasis in developing early literacy skills among children whose parents have low levels of education. This initiative would have several components: adult education campaigns using media to develop competencies among parents to increase phonological awareness, motivation to read, and oral expression in their children.

The language arts curriculum in all grades of elementary school should be reviewed so that there are clear instructional objectives that support a staged process of reading development.

The Ministry should support research that describes instructional practices of reading instruction and that examines the impact of various experimental arrangements to develop the various components of reading proficiency.

The Ministry should support research to identify the reasons why students in lower income groups are less likely to be enrolled in school. If opportunity cost is an important determinant of enrolment, municipalities and the Ministry should expand scholarship programmes that allows low income students to stay in school.

The Ministry should design and implement a multi-pronged strategy to increase access to higher education among low income and Mapuche students. Studies should be conducted to assess whether low income students and their families understand factors determining access to college. The Ministry should support programmes of academic preparation, comparable to those higher income families purchase to prepare their students to pass the exams, to enrich secondary instruction in schools concentrating students whose parents have low levels of education.

An Equity Audit of all programmes currently under implementation by the Ministry of Education should be commissioned. This audit would examine the impacts of all the programmes in equity, irrespective of the intended goals of the programme and would seek to identify opportunities to advance equity through reorientation in programme management.



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