Brazil
Teachers Development and Incentives
A Strategic Framework

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ACRONYMS AND ABBREVIATIONS
CEFAM Center for Teacher Training and Upgrading
CENPEC Center for Research in Education, Culture and Community Action
CNE National Education Council
CONSED National Council of State Education Secretaries
CREDE Centros Regionais de Desenvolvimento da Educação
DF Federal District
FUNDEF Fund for the Development of Fundamental Education & Valorization of Teachers
GIS Geographic Information System
IBGE Brazilian Institute of Geography and Statistic
IDB Inter-American Development Bank
INEP National Institute for Educational Studies and Research
IPEA Institute of Applied Economic Research
LAC Latin America and the Caribbean
LDB National Education Orientation Law & Guidelines
MEC Federal Ministry of Education
MIS Management Information System
MG Minas Gerais State
OECD Organization for Economic Cooperation and Development
OREALC UNESCO Regional Office for Latin America and the Caribbean
PCC Plan of Position and Career
PCN National Parameters of Curriculum
PDE Projeto de Desenvolvimento da Escola (same as SPD)
PNAD Yearly Household Survey
PPV Standard of Living Survey
PROVÃO University Program Evaluation System (known as the “Big Exam”)
QA Quality Assurance
RJ Rio de Janeiro State
RS Rio Grande do Sul State
SAEB National System for Basic Education Assessment
SDP School Development Plan (same as PDE)
SP São Paulo State
TTI Teacher Training Institution
UNDIME National Association of Municipal Education Officers

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### ANNEX I: ACHIEVING ALIGNMENT AND SYNERGY IN TEACHER POLICY

### ANNEX II: POLICY FRAMEWORK

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EXECUTIVE SUMMARY

THE CHANGING FACE OF BRAZILIAN EDUCATION

1. Over the past 10 years, Brazil has made remarkable progress in reshaping its education system, from one of the most inequitable and inefficient in the world to one poised to support its status as a 21st century economic power. Impressive gains have been registered in terms of quantitative expansion, equity, and internal efficiency, increasing the expected completion rate for the 8 grades of *ensino fundamental* from 43 percent in 1990 to 66 percent in 1998, and for the 3 grades of upper secondary education from 17 to 48 percent. The second half of the 1990s has marked a watershed in sectoral policies. Structural reforms of system financing and governance have improved equity and helped to rationalize the long-tangled federal, state, and municipal roles in education. A second generation of “quality” reforms is focusing on the teaching and learning process and has established the foundations of a quality assurance framework through the introduction of a national student assessment system (SAEB), a university program evaluation system (PROVÃO), and new teacher preparation program accreditation procedures. All these measures have resulted in undeniable progress.

2. On the other hand, education authorities remain concerned about the evidence of low teacher quality and the prevalence of poor teaching practices that constrain progress. Wide differences in student performance persist across regions and school systems. Furthermore, Brazil’s demographic transition and rapid secondary school expansion are creating structural pressures on the teaching force—with the demand declining and projected to decline further for grades 1-4 teachers, and rapidly increasing for more highly skilled lower and upper secondary school teachers. Replacing excess early grade teachers and producing adequate numbers of lower and upper secondary teachers, either through upgrading or new recruitment, at a time when the entire system of teacher training is being reformed, will be major challenges. At a macro level, the fiscal sustainability of recent and future mandated salary increases is in doubt, the cost-effectiveness of proposed reforms in teacher training is unclear, and a generous teacher pension system already absorbs 30-50 percent of state education budgets while removing female teachers from the classroom at the peak age of 48 (and males at 53). Finally, new requirements that all teachers have tertiary education may lead to massive recertification of existing teachers through low-quality courses, with little value added in terms of classroom effectiveness but a significant impact on costs.

THE NATIONAL VISION

3. In pursuit of its central goal of quality education for all, the government has focused on teachers as the key school determinant of student outcomes. The first wave of reforms increased teacher salaries and required that new Career Plans (*Planos de Cargo e de Carreira*, PCCs) give more weight to teacher performance. It established higher education qualification and certification requirements, backed by a major upgrading program which between 1997 and 1999 reduced from 44 percent to 38 percent the proportion of teachers with secondary education or less. With the second wave of reforms, the government initiated the establishment of a quality assurance system — outlining broad frameworks, such as the *Referenciais* and proposed guidelines (*Proposta de Diretrizes*) for teacher training, and promoting assessment and evaluation. It has legislated the establishment of a new type of Teacher Training Institution (TTIs), the *Institutos Superiores de Educação* (ISEs), which would operate at the tertiary level but would be more responsive to school needs than universities currently are. In parallel, the government is conducting an Administrative Reform
(Lei de Reforma Administrativa [1998]) which, once fully regulated, will (a) allow for the dismissal of public employees when personnel expenditures are excessive; and (b) establish the conditions for firing poor performers.

THE STUDY

4. The study selectively looks at the complex set of issues surrounding the effectiveness of Brazil’s 1.49 million ensino fundamental teachers in this context of rapid change. Its objectives are to offer an external, objective commentary on the national vision; to contribute new data and analysis to inform it, including a synthesis of lessons from national and international experience; and to lay out options for future policies. It suggests a strategic framework for linking discrete elements of the vision—teacher development, management, and incentives—into a coherent whole, consistent with the experience of countries that have achieved system-wide improvement.

5. The study examines the key stages of the teacher career—preparation, entry into the profession, professional development—as they cut across the policy dimensions of quality assurance, management, and incentives.

Three strategic themes run through the study:

- Improving teacher and teaching quality is a complex endeavor that calls for a sustained, systemic approach.
- Progress has generally been associated with the establishment of a demanding, coherent quality assurance framework rather than “easy” or piecemeal reforms.
- How the fiscal impact of the reform is managed will be critical to sustainability.

6. Given the complexity of the subject, Brazil’s size and heterogeneity, and time and resource constraints, the study had to be selective. Important issues that could not be treated as fully as desirable due to lack of data and existing analyses include: the cost-effectiveness of alternative training approaches; a medium-term expenditure analysis for the education sector, including projected teacher costs as a result of mandated policies, demographic trends, and ongoing improvements in student flows; and a stakeholder/political analysis of the reforms discussed. The report was very heavily focused on the issues facing public education systems, with relatively little treatment given to private schools and teachers. Finally, the report was unable to do justice to the multiple-faceted area of education technology, which will be inescapable both as a curricular dimension and for a large-scale expansion of quality teacher development. These issues should all form part of a priority agenda for future research and study.

7. Chapter I examines the key reforms and demographic trends which have begun reshaping the macro environment for Brazil’s teachers. It analyzes the impact which FUNDEF and the LDB have had on teacher compensation and certification. It traces the impact on teacher supply and demand of improved student flows through ensino fundamental and the rapid expansion of upper secondary schooling. It concludes that the magnitude of the remaining challenges requires stronger instruments to build coherence between policy and classroom practice; to generate synergy between teacher development, performance, and incentives; and to create school systems that focus on student learning and motivate and support the work of teachers in the classroom.

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1 This number refers to “teaching positions.” The number of teachers is actually lower, as one teacher may occupy several positions in different schools.
8. Chapter II looks at the evidence on teacher quality and performance. It analyzes the national achievement (SAEB) test scores, which show continuing wide divergence in student learning across regions and between state and municipal systems. It relates low achievement to classroom observation of traditional frontal lecture and recitation methods still commonly found in many parts of Brazil, low expectations, ineffective management of time, available materials, and discipline, limited repertoire of teaching strategies, and the persistence of a culture which tends to blame the student—not the teacher or the school—for children's learning difficulties.

9. The chapter also summarizes research on the determinants of student achievement in Brazil, which indicates that higher teacher salaries have not translated into better teacher quality, as measured by SAEB scores or lower student repetition. Student learning in Brazil is positively correlated with the general level of education of teachers, but, significantly, students whose teachers have a higher education degree in fields other than teaching do better than students of those graduated from teacher colleges. SAEB results also indicate that teacher in-service training has had little association with students' achievement. Based on available research, the three most conventional mechanisms for raising teacher quality—requiring higher-level initial education, more teacher in-service training, and increasing teacher salaries—have not demonstrated an ability to produce student learning gains or teachers' attitudinal changes of the magnitude sought.

10. These findings do not imply that a strategy that focuses on teachers is inconsistent with the data in the report. It notes that most studies do not measure teachers’ proficiency in terms of competencies, but based on crude characteristics of formal qualifications. Far from being a simple matter of measurement inaccuracies, this can carry real consequences. Career structures and hiring regulations are such that these crude measures are often the only ones available for personnel management. As later discussed, a possible solution found in OECD countries, would involve the development of a quality assurance system— with Teacher Evaluation, Certification and Re-certification, as well as a “professional career” structured around agreed standards of practice and performance\(^2\). The remaining chapters probe what can be done to improve teacher effectiveness.

11. Chapter III focuses on teacher preparation. It finds that who goes into teaching and how they are trained explain much of why teachers often do not meet the needs of the classroom. Even after a decade of upgrading, in 1999 some 42 percent of Brazil’s ensino fundamental teachers did not fulfill the new national requirement of tertiary education qualification level. Forty-four percent had completed only secondary-level education. These underqualified teachers are concentrated in the systems serving the most vulnerable children.

12. Even teachers with higher education degrees are not always well prepared. Faculties of Education and Cursos de Pedagogia have a reputation for being an easy path to getting a university degree and their graduates do not always have content mastery. Among those studying in specialized departments, teaching is seldom the preferred career option. Education Secretariats find that teacher education programs are academically weak, highly theoretical, and largely divorced from effective classroom practices. Few are viewed as innovative. Too many low-quality institutions—particularly in the private sector—are allowed to operate. The recent substitution, at the federal level, of a renewable process of

\(^2\) Standards represent an attempt at describing, in measurable or at least observable terms, which competencies and practices are considered desirable to deliver the curriculum. Standards of practice express the "what", and standards of performance describe the level at which teachers demonstrate mastery of the practice: unsatisfactory, basic, professional, accomplished.
teacher training program accreditation, in lieu of the previous once-and-for-all system, is definitely a step in the right direction, but will take time to be fully implemented and yield broad results.

13. The new ISEs might be a solution. Elements of the proposed design are consistent with international trends, such as the ISE's positioning in tertiary education, and the drive to deepen teachers' content knowledge and to integrate theory and practice through supervised internships in schools or innovative training formats. Open and flexible, the ISE concept has good potential as long as some questions are addressed. It assumes that existing programs will be able to restructure, re-staff, and reorient themselves substantially in a very short period—an institutional flexibility that has not been evident to date. The model will need to be adapted to the needs of the poorest state and municipal school systems. Recognizing that the higher education qualification requirement may be unrealistic for these systems for the foreseeable future, the government recently re-pitched the proposal at tertiary (instead of only university) level, focusing instead on even more important elements of quality improvement, such as a professional orientation based on the desired competencies. Finally, the ISE approach could build on promising strategies such as São Paulo's CEFAMs, and Ceará's Licenciaturas breves.

14. The report recommends a multi-pronged approach to create the external and internal conditions for change. Externally, a first move will be to extend the powerful university program evaluation test (PROVÃO) to schools of education, as proposed by MEC's INEP for 2001. A second, equally powerful step, also planned by INEP, would be to develop professional standards of teaching practice and performance as a basis for a process of teacher evaluation and of initial and periodic certification. Many countries have found that rigorously applied teacher certification standards send a clear and powerful message to the TTIAs as to what product is expected from them. In the recommended approach, such teaching standards would serve to align and bond together all the elements of the teacher policy. Accredited TTIs could serve as teacher certification and evaluation centers. Specific incentives could also help make them more responsive to the needs of schools. Chile's competitive funding mechanism for initial teacher education reform is one good example. Finally, the recently introduced renewable TTI program accreditation system, with peer review panels, could be made more performance-oriented through observation of graduating students in the classroom.

15. An alternative to relying exclusively on the ISEs would be to support whichever TTIs demonstrate the capacity to produce teachers with the desired profile as expressed through the standards. Given the numbers to be trained, technology and distance methods are likely to play a growing role. A "virtual" model coordinating high-quality programs and regional training centers to prepare good teachers for rural areas would also have strong potential.

16. Ultimately, however, any teacher reform must go to the core of the learning process within the classroom if it is to achieve in-depth, lasting change in teachers' behaviors. Substantially upgrading teacher preparation requires a clear, shared definition of the required competencies; recruiting and training a new cadre of teacher educators, combining academic talent with classroom experience; developing two-way contractual links with schools for supervised internships and applied research; using inquiry, dialogue, and experimentation so that future teachers know how to create exciting learning situations which make sense for their diverse students; and building-in an impact evaluation of these new approaches.

17. Chapter IV focuses on teacher management, looking in detail at the entry of teachers into the profession, their career progression, and the way schools operate. At the micro level, a
teacher's performance depends on the school environment in which she or he works. The report finds that the majority of schools in Brazil are not "organized for learning." Despite state-level innovations in the selection of school directors and the increasing involvement of parents and community members in school management, in most schools, leadership, sense of direction, teamwork and results orientation are insufficient to achieve the required cultural change. Despite the increasing use of school-level pedagogical coordinators, these professionals often lack the skills for true instructional leadership and work in relative isolation. School inspections are irregular and control oriented, with little usable feedback to schools. Evaluation of teachers is weak or non-existent, with both performance-related sanctions and rewards for excellence exceedingly rare. Teachers are not held accountable for student results or simply for demonstrating that they have mastered the competencies that can make a difference in the classroom and that they have tried hard enough.

18. A considerable body of research points to the fact that schools should be the target of efforts to drive quality improvement. To create schools focused on learning and tighter accountability; the chapter recommends reinforcing the school development plans (SDPs in Brazil) which are increasingly well established in Brazil, as a core vehicle. The SDP as a quality assurance instrument would be strengthened if it reflected national and state standards and if more states followed Ceará, Minas Gerais, and São Paulo, extending SAEB into regular statewide, census-based assessments of student achievement. This would permit school-level feedback on student performance and the targeting of support. SDPs could also serve to measure the gap between the school's vision and its reality and be more closely related to teacher career growth. Finally, preparation of SDPs could provide a vehicle to develop teachers' self-evaluation and diagnostic capabilities.

19. The report also recommends a close focus on school leadership—criteria and processes for the selection and preparation of school directors, their performance evaluation, and continuing leadership development opportunities. School-level councils with elected parent members have shown promise, especially in rural areas, as a strategy for increasing school accountability even though in some of the more urbanized Brazilian states, school election processes have been politicized, slowing down school improvement.

20. At the macro level, the chapter recommends that employers make entry into the profession more stringent. Recruitment has been tightened and political interference reduced in many parts of Brazil through competition, but the practice is not yet universal, sufficiently substantive, or, as achieved in Ceará, unified between states and municipalities. The government rightly wants to establish a strong initial and periodic certification system based on clear teaching standards. Key questions to be addressed include: who should certify; the balance between content, theory, and practice in the agreed standards; assessment methods; the relationship between performance levels for new and experienced teachers; and the articulation between (re)certification and the incentive structure.

21. Chapter IV also examines teacher career progression. It endorses the government's proposal for probationary internships and more attention to mentoring both inductees and struggling teachers. It points out that most Brazilian systems have no policy or incentives for attracting and retaining good teachers to hardship or remote areas, and recommends a locally based strategy to address this challenge. Finally, although overall pay, retirement benefits, and working conditions for teachers are attractive compared with other government sectors, and superior to average conditions in the private sector, the salary structure is very flat and career progression typically is automatic, based on seniority. Such systems create no incentives for innovation or excellence in the classroom. The report recommends that state and municipal new Career Plans (PCCs) be structured around the standards of performance, and that they
test the effectiveness of steeper salary gradients, linking career progression to performance. The introduction of merit awards (distributed as non-pensionable teacher bonuses) to entire schools demonstrating value-added, similar to Chile’s successful SNED program and its twin in Israel, is also suggested. While recognizing that the link between teacher salaries and performance is a subject of debate in Brazil as in many countries, the report argues that this link is critical to balancing the need to protect teachers from fiscal cuts (in the context of the Administrative Reform) with the imperative of generating efficiency gains to create the fiscal space for reform. It offers guidelines to establish a fair and credible teacher appraisal and evaluation system.

22. Chapter V focuses on teacher professional development. Over the past decade, Brazil made important investments in in-service teacher upgrading and professional development, but many of these programs reflect an old paradigm of teacher training: top-down, off-site, one-size-fits-all, one-shot interventions based on a “skills deficit” and passive (“bancário”) transmission model, and seldom reinforced in the classroom. Many programs are broad and unfocused for lack of clear standards, and rarely explicitly build on research evidence about what works in the classroom. Some appear promising, such as Fundação Marinho’s Telecurso 2000, CENPEC’s and Fundação Ayrton Senna’s Classes de Aceleração teacher training, Procap in Minas Gerais, Proformação in the North and Northeast, the Teacher University in Paraná, teacher distance upgrading in the Federal University of Mato Grosso, and MEC’s pilot programs Parametros em Ação and Formação de Professores Alfabetizadores. The best of these programs are systemic in approach, embedded in research, demand driven, and sometimes school based. However, none has yet been subjected to a full cost-effectiveness evaluation.

23. The chapter supports closer integration of teacher professional growth with school improvement planning and performance incentives. An analysis of recent practices worldwide suggests that teacher strengths and development needs increasingly tend to be evaluated both individually and as part of a team. Thus, periodic “whole school” reviews combining self and external school assessment could bring different perspectives to the evaluation process. To measure the gap between the school vision and its reality, the review team could compare the objectives stated in the SDP with the results of student assessments, of a community survey, and of in-depth site visits and classroom observations. The visiting teams could help the school and its community to produce an improvement Plan, and subsequently monitor and support its implementation. Thus the reviews would not only provide a systematic and built-in assessment of the school team; they would also give to the director feedback on individual teachers to guide the reorientation of instructional practice, and form the basis for teacher professional development and promotion. The findings could be used by TTIs to inform their continuous adaptation of teacher initial education programs.

24. A pivotal strategy for improving teacher performance in many countries is the establishment of teacher networks. Treating teachers as learners is key to quality reform, and networks have been found to be one of the most effective catalysts for ongoing teacher learning and continuous reinforcement of formal training. They help build system coherence between the policy and the classroom levels and can take a variety of forms. In-school, they typically involve pedagogical teamwork and mentoring of novice and struggling teachers by more experienced colleagues, peer observations, etc., with a view to creating a “professional learning community.” Where schools are multigrade or small, networks can connect them into clusters, such as in Columbia’s microcentros. They can link schools to district support centers, such as Ceará’s CREDEs, constitute professional associations, by discipline, or use the Internet. To date, only a tiny fraction of Brazil’s teachers have access to them.
25. Chapter VI focuses on teacher compensation and incentives. Careful analysis of available data confirms that, on average, teachers in Brazil receive a pay per hour worked that is equal to or higher than that of workers in other sectors with the same level of qualifications. Moreover, teachers in the public sector (85 percent of all teachers) enjoy higher job stability, a more generous pension system, a relatively short working day, and a substantial amount of leave. International comparative data reinforce the conclusion that in Brazil, as in the majority of Latin American countries, teachers are not underpaid.

26. Nonetheless, serious issues exist. First, high variance underlies the average teacher salary level in Brazil—much more so than in other countries—depending on the region and type of system (state/municipal/private) in which a teacher works. Teaching is not an equally attractive career option (relative to other jobs) in all parts of the country. The analysis demonstrates that teachers with higher education and those in rural municipal systems are paid below market rates. To ensure that remote and hardship posts are staffed on a stable basis with competent teachers, special programs are usually needed, such as recruiting promising candidates locally; offering scholarships and guaranteed employment at least for a period after graduation; housing credits; and accelerated career advancement.

27. For a sharp upgrading of teacher quality, education systems across Brazil will have to pay more over time to attract more capable individuals at entry and to motivate them throughout their career progression. However, it is crucial for fiscal sustainability that any such increases be highly selective. This selectivity is contemplated in the Administrative Reform Law (1998), that permits the government to hire teachers in the CLT regimen (Consolidação das Leis Trabalhistas). The 1997 FUNDEF reform boosted teacher salaries significantly, but lacked a clear link to performance, whether understood as student outcome, effort, or competencies. Projections based on 1998 salary data show that the total cost of ensino fundamental could increase by a further 22 percent (and by as much as 73 percent in rural municipal systems) as a result of all teachers being required to have higher education degrees. State and municipal education systems must find ways to ensure that these funding increases produce commensurate improvements in quality.

28. Teacher pensions are a burgeoning financial issue in most Brazilian education systems, creating inescapable constraints. In some states, they already absorb as much as 30 to 50 percent of current education budgets. Teachers’ early retirement age and generous benefits will prove increasingly unsustainable as the graying of the teaching force continues. As argued in the World Bank report, “Brazil: Critical Issues in Social Security” (2000), there is no equity justification for maintaining special regimes for primary and secondary school teachers within the Social Security Code. Early retirement not only creates a financial burden which employers cannot afford, but also deprives the system of the more experienced teachers. Phasing out these special provisions would also serve equity across professions. In the interim, one solution for dealing with the projected shortage of secondary school teachers (and reducing pension costs) may be to offer incentives for the best teachers to keep working beyond the eligible retirement age.

29. Even taking into account FUNDEF resources, a crisis in education financing is looming. The upgrading of teacher qualifications to tertiary education, continuous increases in the number of retirees, the linking of pension benefits to current wages on a 1-to-1 basis, and the projected decrease in the number of students in ensino fundamental, all suggest greater budget shortfalls in the future—which will hit the poorer municipalities especially hard. Recent reforms in social security have bought a short period of financial solvency, but within four to five years this dividend will be exhausted. The fiscal context will make it difficult to design reforms that involve better pay and rewards to teachers. The Fiscal Responsibility Law
(Law No. 9801, Article 19) limits government expenditures on personnel to 60 percent of its operating revenue, but its full implementation is awaiting the passage of two laws in Congress which will regulate its effects (the Excess Employment Dismissal Bill and the Inadequate Performance Dismissal Bill). The study calls for a fuller analysis of these issues and of options such as bringing teachers' retirement age in line with that in other professions, and breaking the link between retiree pensions and salary incentives to active workers. Only actions such as these can help guarantee the sustainability of already mandated FUNDEF and LDB policy changes, which appropriately aim at increasing education quality but imply significantly higher fiscal costs.

30. To enhance the competencies and motivation of serving teachers, Chapter VI recommends several measures. One would be for the government to ensure that any salary increases associated with the revision of FUNDEF mandated for 2007 be limited to states and municipalities which have adopted standards and periodic teacher certification and TTI accreditation processes. Another would be to give monetary incentives directly linked to the acquisition of additional certifiable teaching competencies demonstrated to have an impact on student learning. Besides consideration of “whole-school” merit awards, the report urges extending the creative use of non-monetary incentives, such as more professional development opportunities and symbolic rewards, improved physical conditions, and support for school-based innovations.

31. To create incentives for schools, directors could be recruited increasingly on the basis of contracts, with a key performance indicator being value added in terms of student learning. States may consider -- with appropriate precautions -- publishing the results of the school reviews, as is done in the Netherlands, the U.K., and the U.S. Greater transparency and performance feedback to parents can be a powerful stimulant.

32. To create incentives for teacher training institutions, the report recommends several steps. First, a vigorous, rigorously implemented teacher certification process would mean that TTIs would lose clients unless their graduates met employer requirements. Second, a condition for teacher certification could be a degree from an accredited institution, furthering the incentive for TTIs to seek periodic accreditation. Third, funding for public TTIs could be conditional upon program content and quality (consistent with the Referencias, Diretrizes, and state standards) and upon performance in producing graduates with the right profile, enforced through contracts. Fourth, on the promotion side, a competitive funding mechanism to induce institutions to develop high-quality programs could considerably accelerate the desired change process, especially if “accompanied” by technical assistance.

KEY MESSAGES

- Only a systemic approach can achieve change of the breadth and depth sought by Brazil in the area of teacher policy. This means developing a full, multi-pronged strategy but progressing in line with absorptive capacity, which varies from state to state. Success will depend on creating horizontal synergy between teacher development, micro and macro management, and incentives, while keeping a single-minded focus on the key goal of “learning for all children.” This synergy will depend on alignment on a set of professional standards, developed in a consultation with the stakeholders.

- In a decentralized education system such as Brazil’s, ensuring that policy decisions made at the center (federal or state) are operationalized in the classroom requires a set of vertical coherence-building, quality-assurance, and accountability mechanisms linking the different levels and sub-parts of the education system: standards; measurement; performance contracts; and support systems and networks.
• Clearing the fiscal space to finance the teacher reform on a sustainable basis is a priority. This would require implementing as expeditiously and politically feasible the incentive, career and pension reforms discussed in the report.

THE WAY AHEAD

33. The final chapter of the report shows that while there are many paths to the desired goal of quality teaching for all children, the overall strategy should include elements of the following key policy areas:

- Quality Assurance: to build coherence, enhance accountability, and reduce dispersion in outcomes
- A new paradigm of Teacher Professional Development: lifelong learning, often based in schools, oriented toward results, contextualized, and continuously improved in light of formative evaluations
- Better designed, more selective incentives: to make schools and teachers more responsive to the central goal of “learning for all”
- Teacher management: at the macro level, teacher MIS within a geographic information system (GIS) to monitor key teacher parameters, production and dissemination of information to guide investment, disseminate innovation, and drive improvement; at the micro level, multifaceted teacher evaluation.

<table>
<thead>
<tr>
<th>Teacher Preparation</th>
<th>Quality Assurance (QA)</th>
<th>Teacher Prof. Development</th>
<th>Management</th>
<th>Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Preparation</td>
<td>Instruments to control the quality of TTIs (accreditation, program evaluation)</td>
<td>Conditions for successful initial teacher education reform (ISE or other)</td>
<td><strong>Macro:</strong> Deployment of staff</td>
<td>Competitive Fund Local recruitment of Teachers</td>
</tr>
<tr>
<td>Entry into the Profession</td>
<td>Instruments to clarify what is a good teacher and to screen entrants into the profession (teacher certification)</td>
<td>Mentoring and tutoring Induction</td>
<td><strong>Micro:</strong> Supervision of interns</td>
<td></td>
</tr>
<tr>
<td>Teacher Career</td>
<td>Instruments to guide continuous improvement of school performance and teaching (census-based student testing, school reviews, teacher periodic evaluation and re-certification)</td>
<td>Structures and processes that promote continuous teacher learning (teamwork, support, networks) School Development Plan (SDP)</td>
<td><strong>Macro:</strong> MIS/GIS</td>
<td>Selective salary incentives Merit Awards to schools Non-monetary rewards Pension system reform</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Micro:</strong> Whole-school participatory reviews School Council Community relations</td>
<td></td>
</tr>
</tbody>
</table>

34. Chapter VII attempts to map out, on an indicative basis, what might be the concrete implementation demands of the report’s recommendations – which in a number of areas, the government had already anticipated -- especially in relation to three aspects:

Alignment and synergy

35. This would be achieved through a process of collaborative standard-setting, gradually creating a “seamless web” which would link and articulate all the elements of the strategy –
teacher competencies and development, career structure, working conditions and compensation, contractual agreements and evaluation — working like cogs.

Roles and responsibilities

- The **federal government** would continue to lead in the establishment of an overall national vision for teachers and overarching national “frameworks” to guide states and municipalities in key policy areas. The *Referenciais* and the *Proposta de Diretrizes* have laid out a broad framework for teacher education, which, by inference, should provide the foundation for developing a first set of teacher standards. These would form the basis for the proposed teacher certification, to be iteratively aligned with SESu’s program accreditation criteria for TTI and ISEs. The federal government could continue to facilitate the development of ISEs, and to play an increasing role in evaluation, research, and dissemination of innovations that do and don’t work.

- **State and municipal governments** would be responsible for setting detailed standards, consistent with the national frameworks, which in turn would frame the SDPs, TTI and individual teacher performance contracts. To create meaningful mechanisms for school-level accountability and growth, states would set up census-based student assessment systems, “quality assurance” teams for participatory school reviews, teacher networks and other forms of professional support.

Prioritizing and Sequencing

36. The proposed strategy, emphasizing quality assurance and continuous professional development, could broadly apply to all parts of Brazil, although the emphases and pace would be different across regions. A logical, although purely indicative sequence, would be first, to set the teacher standards; second, use them as the basis to (i) establish the certification system, (ii) revise the PCCs, (iii) draft guidelines for the preparation of ITE program proposals by the TTI, if possible backed by a competitive fund. In a third phase, gradually and iteratively all the policy instruments would be developed or adjusted in line with the standards, which in turn would be under continuous improvement. All these instruments have a dual dimension: regulatory and participatory. In the North and Northeast, which are more rural and poorer, and where many schools could be made more lively, the top priorities would probably be on the promotion and participation dimensions: e.g., using standard setting and student assessment as a basis to trigger a state-wide “professional conversation” about quality; or using the preparation of the SDP, the school reviews and teacher evaluation to encourage teachers to reflect on their practice and to spread knowledge about the real meaning of school effectiveness and the determinants. In the more urbanized, privatized, and competitive South, the focus might be more on the managerial and regulatory side, to stimulate ever-increasing performance levels.

Research

37. Priorities for further research cut across finance, planning, and education, and include:

- **Finance**: a full fiscal analysis of the ongoing and proposed reforms and their sustainability in the context of projected demographic and student flow trends; a multi-faceted analysis of teacher incentives and various combinations of policy interventions in this area; a cost analysis of different options for adjusting the pension benefits of education personnel; and a cost evaluation of alternative existing or proposed ISE models.

- **Planning and Management**: an inventory, projections, and analysis of teacher supply and demand and distribution, already under way; a state-by-state “report card” on how teacher
reforms are being implemented, and the impact on quality and equity; and systematic evaluations of teacher initiatives at the level of individual states.

- **Education**: a “reverse tracer study” to identify classroom processes associated with significant student learning improvement in various parts of Brazil and, in turn, the effectiveness of various ITE and PD approaches in explaining these outcomes; piloting and assessing alternative mechanisms for giving teachers constructive feedback and incentives to improve their performance; and multi-media mechanisms for learning and disseminating the great variety of Brazilian experiences.

**Next Steps**

38. The first draft of the report has benefitted considerably from informal comments and inputs from MEC, CONSED, UNDIME, and national experts. From the beginning, the proposed framework has been found highly relevant, and a consensus has emerged on the need to broaden the circle of stakeholder consultations, following a strategy to be agreed between MEC and the Bank.
INTRODUCTION

SYSTEM STRUCTURE

Brazil's basic education system is divided into: educação infantil, offered in creches (for 0-3 year-olds) and in pre-schools (for children aged 4-6); an eight-year elementary school cycle called ensino fundamental (for 7-14 year olds), which is commonly divided into two stages (grades 1-4 and 5-8); and a three-year secondary cycle, ensino médio (grades 9-11 for 15-17 year olds).

THE CONTEXT

Over the past ten years, Brazil has made remarkable strides in reshaping its education system, from one of the most inequitable and inefficient in the world to one poised to support its status as a 21st century economic power. In 1990, about 34 percent of children completed the first 8-year cycle (ensino fundamental) and 23 percent, the 3 years of upper secondary education (ensino médio) —one of the lowest graduation rates in Latin America. By 1998, thanks to expanded educational investment and important quality reforms, the projected completion rates for entering students were 63 and 49 percent respectively, with the biggest gains registered in the poorer Northeast, North and Center-west regions.

Major investments in textbooks, materials, student assessment and teacher upgrading increased the internal efficiency of the Brazilian education system significantly. Repetition in grades 1-8 declined from 34 percent in 1990 to 23 percent in 1997, dropout rates from 6 percent to 4 percent, and age-grade distortion from 64 percent (1991) to 46.6 percent (1998). This has resulted in a rapid expansion of enrollment growth in grades 5-8 and secondary schools, and the prospect for this growth to shift further over the next several years to secondary education, a pattern similar to that followed by the South East Asian “tigers.” Pre-school access has expanded rapidly, promising further improvements in student progress through ensino fundamental over the coming years.

The 90s—and especially the second half of the decade—have marked a watershed in Brazil’s education policies. A far-reaching first wave of system financing and structural reforms, embodied in major legislation3, rationalized the federal, state and municipal roles and began correcting inequities in funding. Reflecting an aggressive new federal role in quality assurance, a second wave of reforms introduced national curriculum guidelines, standardized student assessment, more demanding norms for teacher quality and a new national framework for teacher training. The system of textbook screening and distribution was overhauled, and a massive effort in teacher upgrading almost halved the proportion of untrained teachers to less than 6 percent and brought down the share of teachers without university education to 53 percent in 1999.

At the state level, it has been a decade of innovation and improvement as well. Experiments in decentralized school management, more professional teacher recruitment, training and supervision, and increased investment have contributed greatly to Brazil’s progress. The states of Minas Gerais, São Paulo, Paraná and Ceará stand out in educational innovation and reform.

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Despite these remarkable successes, daunting challenges remain. Student assessment scores have remained stable in recent years and while this is encouraging considering the quantitative expansion achieved, average scores remain below legitimate national ambitions. Furthermore, wide performance differences, highly correlated with poverty, persist across regions and different school systems (private, state and municipal). Finally, Brazil’s rapid demographic transition and secondary school expansion are creating structural pressures on the teaching force, with declining demand for grade 1-4 teachers and increasing demand for more skilled and specialized grade 5-11 teachers.

THE STUDY

All in all, in Brazil the decade of the 1990s has been a period of remarkable change in the policy framework for education in general, and ensino fundamental in particular. Key national reforms are producing cascading changes at the state, municipal and school levels. As in any country, however, the ultimate test of success for new educational policies and increased sectoral investment is the extent to which they translate into improved teaching and learning in the classroom. This is why the government’s strategy focuses on the nation’s 2.4 million teachers and this report, on the 1.49 million teachers in ensino fundamental.

Recognizing that improving the quality and performance of teachers is the key to further educational progress, MEC recently led a collaborative effort with leading Brazilian educators to formulate a new national vision and policy framework for the teaching profession. This report offers an external commentary on that vision and contributes new data and analysis to inform it, including relevant lessons from international experience. It also suggests a strategic framework for linking discrete elements of the vision—teacher preparation, development, management and incentives—into a coherent whole, consistent with the emerging experience of countries across the world which have achieved large-scale improvement. This experience points to the need for a systemic approach which links policy with classroom practice, generates synergy between teacher development strategies and teacher incentives, and creates schools and school systems which center on student learning and motivate/support teachers in the classroom.

The structure of the report is as follows. Chapter I examines the key reforms and demographic trends which have begun reshaping the macro environment for Brazilian teachers. Chapter II scrutinizes the evidence on current teacher quality and its impact on student performance. Chapters III, IV and V focus on the three key stages of a teacher’s life cycle—pre-service teacher training; entry into the profession and career progression; and ongoing professional development—analyzing programmatic issues and policy options in each area. Chapter VI looks broadly at the cross-cutting issue of incentives. Finally, Chapter VII places the policy and programmatic options discussed throughout the report within a comprehensive strategic framework to improve the effectiveness of the most costly and important resource of Brazil’s education system—its teachers. It also maps out a possible implementation sequence.

The report draws heavily from two background studies prepared by two teams of respected Brazilian researchers. One is “Licoes de Experiências em Programas de Formação de Professores, (1999) a qualitative analysis of ten different teacher training programs in the states of Ceará and São Paulo, carried out by the independent education research group, the Center for Studies and Research in Education, Culture and Community Action (CENPEC). The analysis focused on states where the World Bank had active projects (so that the evaluations could

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4 This figure refers to "teaching positions". The number of teachers is actually lower, as one teacher may work in several schools and hold more than one teaching position.
contribute to project implementation), in full collaboration with the state Secretariats of Education. Specific programs were selected on the basis of two criteria: (a) how well they corresponded to OECD-established norms for high-quality teacher training; and (b) the qualitative judgment of the Brazilian researchers that these programs were innovative and promising. The evaluations focused on qualitative assessment of programs’ effectiveness.

The second study, conducted by the Institute of Applied Economic Research (IPEA) ("Professores Públicos no Ensino Fundamental: Uma Análise da Demanda, Salários e Benefícios, Performance e Carreira Profissional." (2001), analyzed: (a) the determinants of teacher salaries in Brazil; (b) the determinants of student learning outcomes, including key teacher variables; (c) the implications of the demographic transition for the future demand for ensino fundamental teachers; and (d) the extent to which the newly revised career plan and salary structure (Planos de Cargo e Carrera - PCCs) for teachers in two states, Ceará and Rio de Janeiro, have been implemented and respond to the recommendations set out in the 1996 LDB. The CENPEC and IPEA studies, which form an integral part of this report, and are available upon request.

This report also benefited from twelve background papers prepared for a joint World Bank & Inter-American Development Bank Conference on “Teachers in Latin America: New Perspectives on their Development and Performance,” which took place in Costa Rica in June 1999 (see Bibliography). Finally, it was enriched by the debates which took place during various workshops such as those organized by MEC/INEP with World Bank support in September 1999 on “Teacher Professional Development and Quality Assurance in Education”, and by IPEA in January 2001.
CHAPTER I: THE CHANGING FACE OF PUBLIC EDUCATION IN BRAZIL

KEY REFORMS AND THEIR IMPLICATIONS FOR TEACHERS

Education reforms over the past decade have reshaped the Brazilian ensino fundamental system in profound ways. This section looks in detail at the most important reforms and their implications for teachers.

FUNDEF

The 14th constitutional amendment, passed in 1995 to create a new mechanism for channeling the tax revenues allocated to ensino fundamental, is without a doubt the most far-reaching change introduced in Brazilian education in recent years. It establishes a yearly per-pupil spending floor of R$315 (for 1998) as a way of reducing the disparities across and within states in the public financing of ensino fundamental. Where the threshold cannot be attained, state and municipal expenditures are complemented by the federal government.

FUNDEF has had a major impact on the labor market for teachers, as sixty percent of its resources are earmarked for teacher salaries. In Brazil’s poorer regions, FUNDEF resources are for the first time creating the conditions for better salaries and prestige in the teaching profession. The FUNDEF legislation requires the adoption of career plans and provides a stimulus for teacher training as, during a 5-year period, its resources can be used to train and certify teachers who lack minimum degree requirements.

Before FUNDEF, wide disparities in education spending (from $30 per student per year in the poorest rural municipal schools to $1,000 per student in the wealthier states) existed between state and municipal school systems and across different regions. During its first year of operation FUNDEF redistributed R$13.3 billion, of which 62 percent went to the states and 38 percent to the municipal governments. For 2000, the corresponding figures are estimated at R$ 17.0 billion, 55 percent and 44 percent. The municipal school systems have been the main beneficiaries, as the transfer of resources allow a significant increase in per pupil expenditures. The impact has been strongest in the North and Northeast.

As a result of FUNDEF, between December 1997 and June 2000, teachers’ pay rose by 23 and 27 percent respectively for teachers with secondary and higher education level training. Broken down by network, the average increase was about 33 percent for the municipal school systems and 25 percent in state systems (to be corrected by the inflation rate of 12 percent during the period). It was highest in municipal school systems in the Northeast (nearly 60 percent).

FUNDEF also has had an important effect on ensino fundamental enrollments, as its “funding-follows-the-student” design creates a strong incentive for schools to attract and retain students. It has motivated many municipalities to institute school transport systems for the first time. In FUNDEF’s first year (1997), enrollments in fundamental education increased by 6 percent nationwide, over 12 percent in the Northeast and nearly 8 percent per year in the North. FUNDEF has accelerated the transfer of fundamental education (from states) to municipalities, raising the share of the latter in total ensino fundamental enrollments from 32 percent (1995) to 45 percent (1999); the increase was stronger for grades 5 to 8 (72 percent) than for grades 1 to 4 (50 percent).

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5 Constitutionally, 25 percent of all tax revenues and tax transfers in any given state are to be invested in education. Of this, at least 60 percent must be allocated to FUNDE. This is equivalent to 15% of total tax revenues.
6 The per capita allocation has been increased and differentiated, reaching R$ 333 for grades 1-4 and R$350 for grades 5-8 and special education (2000).
percent), posing an acute quality challenge given the qualification profile of rural municipal teachers. Between 1997 and 1999, enrollments in municipal systems grew by nearly 31 percent while they declined by over 8 percent in state systems. Most dramatic is the reported growth in municipal system enrollments in the North (51 percent) and Northeast (29 percent).

**LDB - New National Legal Framework for Education**
The 1996 LDB was a far-reaching initiative. With 27 states and 5,500 municipal school systems, educational provision is highly decentralized in Brazil, and the country has suffered from two classic problems of decentralized systems: unclear and overlapping responsibilities among levels of government, and large spending inequities and quality variations across regions and providers. The LDB addressed these by strongly reaffirming the lead role of the federal government in national policy formulation, guaranteeing equity and quality assurance. It assigned states the lead responsibility for upper secondary education, and municipal governments the lead responsibility for pre-school and ensino fundamental (grades 1-8).

**National Curriculum Parameters**
In line with the new emphasis on the federal government role as coordinator of national policies, the federal Education Ministry (MEC) developed a national curriculum framework (PCNs) covering ensino fundamental, youth and adult education, early childhood education, indigenous education and secondary education. The PCNs are meant to be adapted by the states, municipalities and schools to local needs, and a training framework was set up to support its adoption in classrooms. Based on the latest principles of contemporary curriculum design, the PCNs stress developing students' capacity for independent learning, critical thinking and problem solving, and linking knowledge to students' background and previous experience. The framework also provides for transversal themes of relevance to daily life—ethics, environment, democracy, cultural pluralism and sexual guidance.

**Student Assessment and Evaluation**
MEC also established a modern education information system in support of more efficient sectoral management. Created in 1997 through a reform of existing institutions with 60 years of experience, the National Institute for Educational Research and Studies (INEP) became responsible for conducting, at various intervals, censuses of schools, teachers, and higher education institutions, as well as studies on education spending and funding to guide both resource distribution and program evaluation. It launched the first standardized student assessment system (SAEB) and the National Secondary Education Exam (ENEM). The SAEB test and questionnaire are applied every other year to a nationally representative sample of 4th, 8th and secondary 3rd-year students (11th grade). SAEB data have made it possible not only to track student learning, but also to analyze the factors influencing learning outcomes. ENEM is an optional end-of-upper secondary-cycle examination which is rapidly becoming a credential to a first job for young labor market entrants.

An equally important initiative is the PROVÃO (the National Courses Examination), which evaluates the quality of tertiary education programs. PROVÃO tests are administered to graduating students in target disciplines on a compulsory basis, as a condition for graduation (94 percent of enrolled students participated in 2000). Individual results are sent to the students only but are increasingly taken into account by employers for recruitment. Results by institution and by discipline are becoming an increasingly important input to MEC’s assessments of Higher Education Institutions conducted by SESu, MEC’s Secretariat for Higher Education (see next section).
In the space of five years, PROVAO coverage has expanded to 18 different disciplines. The dissemination of PROVAO results has begun to affect student enrollment patterns, with growing demand for programs revealed as higher quality. Most importantly, poor-performing institutions have felt pressure to take serious measures to raise the quality of their offerings, mainly through teacher upgrading and the hiring of more qualified faculty, leading to improvements in their marks and rankings. MEC has extended the PROVAO to biology, physics and chemistry “licenciaturas” in 2000 and plans to cover pedagogy courses in 2001.

Accreditation and Recognition of Higher Education Institutions and Courses
Traditionally, higher education institutions were accredited by SESU on a once-for-all basis. In order to promote continuous quality upgrading, in 1997 the government introduced new legislation requiring that accredited status become subject to periodic renewal at 5 years intervals. SESU assesses each University courses included in the PROVAO in terms of qualifications of its teaching corps, pedagogical organization, physical and academic facilities. The assessment is a multi-step process involving a site visit by an Evaluation Commission, a technical review by a Specialist Commission, and a final review by the National Education Council (CNE), with recommendations to the Minister. The institutions receive a report with questions designed to guide a process of continuous assessment, and the extent to which the recommendations are heeded is taken into account in the process of periodic “recognition” of courses and accreditation of institutions.

Reform of Textbook Selection and Distribution
Early on, the government tackled the provision of textbooks and learning materials because of the demonstrated impact they can have on student learning outcomes, particularly where teachers’ content knowledge and teaching skills are weak. National expert panels reviewed all of the textbooks and supplementary books being used for quality and accuracy. In the spirit of decentralization, these evaluations (on a simple star rating basis) were provided to schools and teachers, who could continue to choose their own books. In the space of a few years, tighter contracting and quality control have reduced average textbook costs by almost 50 percent while raising quality, and have dramatically improved the timeliness of delivery.

Accelerated Classes
A 1998 MEC report indicated that about 47 percent of students in ensino fundamental were over-age for their grade, due to late entry and multiple repetitions. Concerned with the high dropout rates among overage students as well as the financial cost of age-grade distortions (putatively estimated to increase total public spending for that level of education by 30 percent), the LDB allowed for more flexible mechanisms, such as multi-year cycles, to accelerate the progress of these students and reintegrate them in the grade corresponding to their age. Half a dozen states have adopted variations around the basic design features of the program, discussed further in Chapter II. While formal evaluations are still needed, two years into the program, MEC estimated that about 45 percent of the 1.2 million participating ensino fundamental students had caught up and were able to enter 5th grade at the normal age. However, as discussed later in this report, this success in flow correction will intensify the pressure on secondary education. and the depth of learning achieved by some of these students remains somewhat questionable.

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8 The same principles apply to the processes of initial course authorization (valid for 2 years in the case of a 4-year course and for 3 years in the case of a 5 year course), recognition (every 5 years), and “evaluation of supply conditions” (Availiação das Condições de Oferta).
11 Although high, the percentage represents a substantial improvement over 1991, when it exceeded 64 percent.
12 Em Aberto, issue on Flow Corrections, 2000
Teacher Qualifications and Career Plans
To improve the quality of teaching, the LDB (Art. 61-67) provided that, as a complementary measure to the FUNDEF: (i) by 2001 all untrained teachers (7 percent of the total in 1997) should be certified; and (ii) by 2007 all new ensino fundamental teachers should have a higher education degree. These changes and their projected impact are analyzed later in Chapter III.

The LDB also provided for teacher recruitment through open and competitive processes (concurso), and entitled teachers to ongoing professional development on paid time. Promotion was to be based on training or performance evaluations, and teachers’ workload—up to 40 hours per week—must include time for individual study, preparation, teamwork, planning and assessment. Finally, the LDB called for states, municipalities and the federal district to define new career and work plans (PCC) reflecting these provisions as well as guidelines for implementation.

Reform of Teacher Preparation
Beginning in 1998 MEC initiated a large national and international consultation on the type of teacher training programs that would be required to support the implementation of PCN. This required a reflection on the changing role, professional practice and development of teachers, and implications for the organization and curriculum of teacher training. The ensuing report, called Referencias para Formaçao de Professores set out the broad elements of a new vision for teacher preparation in Brazil (see Box 1.1 in the Annex) and called for sweeping institutional changes.

It is complemented by a document entitled Proposta de Diretrizes para a Formação Inicial de Professores da Educação Básica, em Cursos de Nivel Superior. Perhaps the single most important characteristic of this new strategy is its proposal to shift the logic underlying teacher preparation from a supply-driven, qualification-based approach to a demand-driven, competency-based one. The issues identified by the Referencias and the Proposta, as well as the new reform proposals and their implications are analyzed in detail in Chapter III.

DEMOGRAPHIC TRENDS AND THEIR IMPLICATIONS
The revolution in practically all key aspects of the policy framework for ensino fundamental is not the only change facing Brazil’s teachers. Demographic trends are also having a major impact on the profession and will continue to over the next ten years. The staffing requirements for ensino fundamental are changing rapidly, driven by two underlying factors:

- A dramatic decline in the birth rate has reduced the absolute number of children reaching school age in recent years. In many of the richer states, the number of school-aged children is already declining. In poorer states, the number of incoming children is stabilizing or will start declining by 2010.

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13 Referencia para a Formação de Professores, Secretaria de Educação Fundamental, MEC, 1999
Education reforms under implementation or planned for the near future are improving the efficiency of the system. Over the period from 1993 to 1988, the proportion of students with age-grade distortion greater than one year fell dramatically among children 9-14 year olds. The proportion of 9 year olds behind the expected grade fell by one third, from 31 percent to 19 percent, while for 14 year olds it fell by 20 percent, from 68 percent to 55 percent. The significant decrease in the average number of years a typical student takes to complete each year of ensino fundamental and on their probability of completing grade 8\textsuperscript{15}

Such changes have two consequences. They will reduce the number of teachers required in grades 1-4, and they will increase the requirements for grades 5-8. (Demand for pre-school teachers will continue to grow as coverage is still not universal).

To understand the scope of possible efficiency gains, it should be noted that, as indicated before, in 1998 nearly 47 percent of students in ensino fundamental were overage for their grade. If the current student to teacher ratio were to remain fixed as a management parameter, as repetition declines the required number of teachers would shrink by more than one third. This would have major implications in terms of teacher allocation, number of classes, spatial distribution of schools and number of grades offered.

Improvements in the repetition rate will be instrumental in facilitating potentially large efficiency gains in the demand for teachers in grades 1-4. However, managing the staff deployment implications of lower repetition rates will present challenges for state and municipal education systems. There will be a lower demand for teachers in grades 1-4 and an increase in demand for grades 5-8 and for pre-school education. This will raise a number of issues:

- Teachers currently assigned to grades 1-4 are generally not prepared to teach in grades 5-8. They would require further education (most do not have college education), including substantial pedagogical and content specific training.

- In an effort to adapt to the changing demands for teachers, many teachers formally qualified for grades 1-4 may attempt to re-qualify themselves for grades 5-8. For them the easiest route will be through one of the many low-quality teacher training colleges in existence. While it is critical to give existing teachers an opportunity for professional growth, it will be equally important to establish quality assurance mechanisms (such as the proposed "probatory internships") for new grade 5-8 teachers.

- By the end of the decade, the same poor municipalities and states in which the number of grade 1-4 students is still growing, requiring a larger number of teachers in the near future, may also find themselves confronted with an excess supply of grade 1-4 teachers and a shortage of grade 5-8 teachers. Many poor municipalities in the Northeast, for example, are well aware of this potential problem and are attempting to manage the teacher recruitment process carefully so as not to compromise the flexibility they will need in the future. The design and implementation of professional career paths and development plans will need to be adjusted accordingly.

\textsuperscript{15} Data obtained from Pesquisa Nacional por Amostra de Domicílios (PNAD), 1988 e 1988. An indicator of age-grade distortion was computed for each child in school in the sample, the proportions referred were computed by estimating the proportion of children with age-grade distortion greater than one year in the sample by age cohort. Source: IPEA 2000.
• A common strategy for reducing the excess grade 1-4 teaching force is through attrition and retirement. However, as demonstrated by the state of Rio de Janeiro, this strategy can generate a new problem, by increasing the proportion of the salary budget required to pay pensions. If left unimpeded, this trend will reduce considerably municipalities' and states' degrees of freedom in designing effective salary and incentives programs for serving teachers—which are necessary to reward performance in the classroom.

To illustrate the vastly different demographic situations of the Northeast and Southeast, Annexes 1 and 2 “IPEA - Costa Analysis and Demand Projections” present, for the states of Ceará and Rio de Janeiro, detailed projections of the expected demand for teachers in ensino fundamental and upper secondary education over the coming decade.

OUTLOOK FOR TEACHERS

Virtually all aspects of the environment in which Brazil’s teachers work have begun to change. In terms of support, more resources and materials are available in the classrooms than ever before, although conditions in many school systems remain very basic. There are more training opportunities, through face-to-face courses, distance learning programs and even programs of mentoring. Salaries are becoming more attractive, dramatically so in rural and low-income areas.

On the other hand, the pressures on teachers from many different directions also are increasing. Declining enrollments in some parts of the country are leading to reduced demand for grade 1-4 teachers. The curriculum and content they are expected to teach has become significantly more challenging. By directly exposing how well students are learning, SAEB assessments make teacher performance much more transparent. The LDB and FUNDEF have established new and significantly higher expectations for teachers’ qualifications and on-the-job competencies. New forms of school governance and new methods of selecting school directors are changing the ways schools are organized and operate internally. And moves toward tighter supervision in many state and municipal systems are increasing the performance pressures on teachers.

Some of these changes are beginning to be felt in parts of Brazil, but not yet in others. Other reforms, including those which will affect teachers most directly—teacher standards, certification and the reform of initial teacher education—are on the horizon but have not yet been implemented. The next several chapters of this report look at each of these key areas in depth: teachers’ classroom performance; teacher preparation; management of schools and teachers; teacher development; and teacher incentives. One building block at a time, they demonstrate that a teacher quality reform of the depth and scope desired in Brazil requires a systemic approach.
### Table 1.1: Percentage of population with more than 1 year of age-grade distortion.

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### Table 1.2: Average delay in number of years, per age

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CHAPTER II: TEACHER QUALITY AND STUDENT LEARNING

INSIDE THE CLASSROOM: TEACHER PRACTICE IN BRAZIL

There are excellent teachers in all parts of Brazil, but the dominant reality is frequently different. Videotape transcripts and expert observations of 140 grade 1 classrooms in Bahia and Ceará conducted in 1997 provide one of the most exhaustive and systematic analyses to date of teacher practice in Brazil, and clearly identified major issues of teacher quality that have been corroborated by scores of smaller-scale studies in other parts of the country. There are some 208,000 classrooms in Brazil (1999), and although the research focused on a tiny sample in two Northeast states, where the question of weak content mastery is more acute than elsewhere, and it pre-dates the massive upgrading and certification efforts launched with the LDB, numerous interviews with prominent education officials and researchers from the Southern regions of the country confirm that the challenges identified are valid across large segments of the public school system.

Weak Content Mastery
In 1997, close to half of Brazil’s teachers had only a secondary education or less (see Chapter III, Table 3.1). The deficit of teachers qualified to teach reading, writing and basic mathematics may explain why in the early grades observed, the foundation skills—literacy and mathematics—were only allocated 9 percent of contact time each, compared with 30 percent in OECD countries. In Portuguese, one-fourth of teachers misspelled over 7 percent of the words they wrote, and three-fourths made syntax errors. Teachers appeared to assume that 1st graders knew how to read and write and did not focus on it, approaching reading as secondary and almost punitive activity. Indicators of teachers’ subject mastery were not collected for mathematics, but the little emphasis it received means that children lack a solid foundation on which to build more advanced mathematical problem-solving and scientific reasoning skills. It also amounted to a missed opportunity, in that numeracy is a matter of survival for poor children and can be effectively taught in ways that make school relevant to their daily reality.

Limited Repertoire of Very Traditional Teaching Practices
Teachers typically displayed a narrow repertoire of one to five pedagogical strategies per hour, with a notable drop in variety as the day wore on. Relatively passive activities dominated, with written exercises, homework processing and routines using about half of instructional time. Copying from the blackboard was the single most frequently used technique, followed by dictation. This overemphasis on writing had a negative effect on students’ scores whereas more reading boosted them. Only occasional signs of constructivist approaches, such as student-prepared materials, were observed. Other interesting innovations were often unsystematic and therefore limited in their effectiveness. For example, some teachers attempted to depart from “frontal” teaching by grouping students’ desks into clusters, but then maintained conventional teacher grading practices instead of using modern techniques such as collective problem solving or reflection. Conspicuously absent was the use of games or other activities that make learning fun for early graders. Textbooks and teachers’ guides were generally available in the classrooms, but strikingly underutilized by teachers. A small minority of classrooms showed creative use of local materials or resources—stones, plants, shells, wall maps of the community, interviews with

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16 See for instance “Escola” a monthly professional magazine for teachers, published by Fundação Victor Cunha.
18 For instance, the Proposta de Diretrizes... (2000) already mentioned notes on p.8 that, over time”, “the role of the teacher was reduced to no more than the mere execution of fragmented teaching and curriculum coverage tasks... [while] their preparation was limited to the transmission of content knowledge and critical procedures”.
community members, mobilization of parents—to enrich learning and the classroom environment, and open it to the world.

**Little Use of Interactive Teaching Methods**
Researchers found few examples of teachers using probing questions or stimulating exercises to create exciting, relevant learning situations adapted to the age, background, abilities and learning styles of their pupils. Practices tended to be mechanistic and routine. Students were frequently offered unchallenging assignments, such as the self-described readers being lined up on the left side of the classroom and non-readers on the right side, with the former being asked to read quietly while the latter could move to the left as soon as they had identified ten one- or two-syllable words written on the blackboard.

**Teacher-centered Practices**
During one-hour observations, teachers interacted mainly with the whole class to give explanations (7.4 times per hour on average) and to a much lesser degree to stimulate learning through questioning, asking children to draw analogies or paraphrasing (1.3 times per hour). When he/she interacted with a small group, it was mainly discipline-related. Boys received more teacher attention than girls, either on disciplinary matters (6.9 vs. 3.2 observations per hour) or in the form of positive reinforcement (5.8 vs. 4.3). Of every 13 questions asked by teachers, ten reflected a controlling rather than a facilitating or probing approach. On average, less than \(\frac{1}{4}\) of the students actively participated, mainly in the prescribed activities. Signs of student resistance or distraction were more frequently observed than students positively engaging the teacher, e.g., to show progress or seek guidance, volunteer ideas or go to the blackboard. When students did not understand, teachers tended to either ignore them or repeat the same explanation, rather than try another presentation. The teacher/student relationship was described as respectful but distant in 57 percent of the classrooms and “distant” in 23 percent. These observations give a sense of the cultural change required to make Brazilian schools learner-centered and child-friendly.

**Ineffective Use of Time**
Time on task is key for student learning, especially considering that the official school day in Brazil averages only 3 hours and 45 minutes. Taking into account late teacher arrival, the snack break, slow start of exercises, time lost distributing mimeographs or plain paper, sharing scissors to do a collage or stapling, effective classroom time averaged only 3 hours and 8 minutes, slightly more in large schools. Teachers favored low order skill assignments—copying or written tests—that minimized their stress while maintaining discipline in an authoritarian context. Instruction often appeared unfocused, perhaps due to a lack of clarity in curriculum objectives or as to what constitutes good teaching practice.

**A “Culture of Failure”**
When asked what did not work in their classroom, 51 percent of teachers blamed the children, and only 3 percent questioned their own practices. Teachers did not believe that if children are not learning, it is the system’s or their fault and not the child’s. Teachers evidenced little conviction that they could make a difference in their pupils’ learning and future. The 1999 SAEB report shows that students whose teachers have high expectations do better on tests, a consistent finding in many other countries as well. But such a positive attitude is at odds with the dominant culture in Brazil. More commonly, “high expectations” are equated with demandingness, high repetition and reprobation. Teachers persistently attribute students’ lack of success to non-school factors: poverty, family instability, nutrition, etc., which are outside their control. Reflecting on their own practice and working collaboratively to determine what is within their power to help has not featured prominently in teacher professional development programs. Ultimately, these interviews suggest, teachers do not feel accountable for student progress, and for trying every possible avenue to improve learning for all students.
SAEB EVIDENCE ON TEACHER EFFECTIVENESS

Low Baseline Learning Performance

SAEB assessments and Brazil's results in the 1998 UNESCO/OREALC assessment of student learning across Latin America, shed some light on how well students are learning and the variation in student achievement across school systems. The SAEB 1997 report was sobering: it found a large gap between the "intended curriculum" and the "attained curriculum," or students' actual content mastery. Broadly speaking, the average 8th grader in Brazil performed at a 4th grade level, and 11th graders (3rd and final year of secondary education), at an 8th grade level.

In SAEB 97, for mathematics, just over half of 4th graders were capable of solving a simple addition or subtraction problem involving only natural numbers. Only 11 percent of 4th graders and 48 percent of 8th graders reached the 250 proficiency level, which corresponds to the end of the first 4-year cycle. In Portuguese, only 26 percent of 11th graders could read and interpret a short, complex text. In science, the results were slightly better: 48 percent of 8th graders exceeded 6th grade level proficiency. However, only between 27 and 31 percent of 11th graders showed mastery of concepts such as pollution, temperature or food chain.

The SAEB 99 report (http://www.inep.gov.br/saeb/saeb99), which sampled over 360,000 students, shows generally stable but occasionally declining levels of performance across most grades, subjects, regions and school systems (see Table 2.1).

<table>
<thead>
<tr>
<th>Discipline &amp; Grade</th>
<th>SAEB97 Average National Grade</th>
<th>SAEB99 Average National Grade</th>
<th>SAEB99</th>
</tr>
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<tbody>
<tr>
<td>Portuguese 4th Grade, EF</td>
<td>186.46</td>
<td>170.73</td>
<td>Lower average grade: Brazil plus 19 states</td>
</tr>
<tr>
<td>Portuguese 8th Grade, EF</td>
<td>250.00</td>
<td>232.90</td>
<td>Lower average grade: Brazil plus 17 states</td>
</tr>
<tr>
<td>Portuguese 11th (3rd Grade EM)</td>
<td>283.86</td>
<td>266.57</td>
<td>Lower average grade: Brazil plus 15 states</td>
</tr>
<tr>
<td>Mathematics 4th Grade, EF</td>
<td>190.80</td>
<td>181.00</td>
<td>Lower average grade: Brazil plus 8 states</td>
</tr>
<tr>
<td>Mathematics 8th Grade, EF</td>
<td>250.00</td>
<td>246.36</td>
<td>Improved average grade: 1 state Stable average grade: Brazil plus 25 states</td>
</tr>
<tr>
<td>Mathematics 11th (3rd Grade EM)</td>
<td>288.70</td>
<td>280.29</td>
<td>Stable average grade: Brazil plus 17 states Lower average grade: 9 states</td>
</tr>
</tbody>
</table>

Source: INEP's SAEB99 Report
EF – Ensino Fundamental
EM – Ensino Médio.

While a micro analysis of the results of the SAEB 99 is not available, several factors may have contributed to the declines in performance from 1997 to 1999. First, thanks to FUNDEF, an additional 1.8 million students enrolled in the ensino fundamental, mainly in the poorer states and municipalities. Many if not most of these children came from lower socio-economic backgrounds and are therefore more academically at-risk, requiring from the teachers, pedagogical adjustments which have yet to materialize. Second, pedagogically appropriate programs such as the

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19 The SAEB report distinguishes between "levels of performance", which are bands, and punctual scores. Thus, a school system may register a decline in score while remaining at the same performance level. Table 2.1 reflects scores.
accelerated classes ("Classes de Aceleração") and automatic progression ("Progressão Automática") may have had the unintended short-run consequence of lowering average performance by moving children up to higher grades more quickly. A third possible explanation, found in many countries engaged in broad, intense and rapid educational reform processes, is simply an overload relative to the system’s absorptive capacity. Finally, in general a long lead time is required for education reforms to have a positive impact on student learning, due to the non-linear relationships between quality inputs and outcomes. This is certainly valid for Brazil, given the municipalization, curriculum and many other reforms described in Chapter 1, as well as the need to overcome the cumulative effects of decades of neglect. Overall, the SAEB 99 results do not alter the findings discussed in this section.

A wide gap between formal curriculum expectations and average student learning raises the questions of whether curricular expectations are too demanding, and whether schools and teachers are sufficiently familiar with the curriculum. The fact that Brazilian students’ performance on the recent UNESCO/OREALC assessment was broadly on par with their counterparts in Argentina and Chile and ahead of most other countries in Latin America lends some support to the conclusion that the formal curriculum in Brazil embodies high expectations. This is not uncommon; many OECD countries are consciously setting higher and more sophisticated curriculum goals in light of the challenge of global competitiveness. What SAEB results clearly indicate is that Brazil’s teachers and schools today are not effective in delivering this curriculum to students.

Variations in Performance Across Regions and School Systems
A second concern raised by SAEB scores is that learning progress varies significantly across regions:

- The SAEB 97 noted a particularly marked improvement in 8th grade mathematics and Portuguese scores in the Northeast as very encouraging news since this is where enrollment has grown most rapidly, which normally places downward pressure on scores. According to the SAEB 99 Report, the positive trend in the Northeast continued in 8th grade math (but not in 4th grade math), while the lead of Southeastern states appeared to be eroding.

- Scores are lower in public schools (whether municipal or state) than in private schools. Private schools in Brazil tend to be elite schools, which have higher average student socioeconomic characteristics (including levels of parental education) and practically no overage students. Interestingly, SAEB 97 showed that children of less educated parents attending private schools did better than children of more educated parents studying in public schools. Another finding was that private school students performed better than public school students despite the fact that private school teachers tended to have fewer years of education and experience than government teachers. Under SAEB 99, however, in some states private schools also registered declining scores, raising questions about the simple design and/or the comparability of the tests over time.

- SAEB 97 brought out only minor differences in student learning progress between state and municipal schools, even though state teachers are more qualified and better paid than municipal teachers. One conclusion was that average scores for municipal schools may hide a large underlying variance between large, affluent municipalities and poor, rural ones. SAEB 99 shows that the municipalization process is not having the negative impact some had feared: municipal school systems registered stable levels of performance in math and Portuguese in 4th and 8th grades despite larger score declines than the state and private systems in the other areas. This effect was particularly strong in the Northeast, where over 71 percent of ensino fundamental enrollments are in municipal schools.

- In all disciplines, grades and regions, students living in capital cities do better than their counterparts in the interior. This might reflects the compound effect of more qualified
teachers, better infrastructure, and more social capital. However, regional inequalities persist: capital cities in poorer regions scored below some rural areas in the South.

- Both SAEB 97 and 99 find that over-age students do least well on the test, a problem which worsens as the age-grade distortion increases. This factor is important in explaining the performance gap across regions of Brazil: for instance, while 49 percent of 4th graders in the Southeast have the right age for their grade (10 years old), the corresponding proportion for the Northeast is only 23 percent, a finding which holds for 8th and 11th grades as well(SAEB99).

**Teacher-related Determinants of Student Learning Outcomes**

SAEB 97 data revealed that higher per-capita spending and, in particular, higher teacher salaries do not automatically translate into better student learning results. As in many other countries, there is not a tight correlation between education spending on teacher salaries and student learning outcomes, at least in the short-run. For instance, the state of Minas Gerais, which in 1997 had the best scores in 4th grade, has lower yearly per capita FUNDEF investment (R$355) and lower salaries for grade 1-4 teachers (R$480) than São Paulo (respectively R$678 and R$751).20

SAEB 97 confirmed that student performance increases with teachers’ level of education, but specialized preparation in teacher education colleges did not appear to have positive impact21(Table 2.2). Regressing SAEB results against teacher qualifications shows a positive correlation between students’ scores and the number of years of teacher education up to full licenciatura (4-year undergraduate higher education degree). Qualifications beyond this level (i.e., graduate degrees) produced no additional positive impact except for student scores in upper secondary-level physics and biology. A potentially important finding in light of the new LDB requirement that all teachers have tertiary level preparation in teaching is that students whose teachers have higher education degrees in disciplines other than education2 did better on SAEB 97 tests than students of teachers with university preparation as educators22.

Preliminary analysis of SAEB 99 reconfirmed the positive correlation between student achievement and teacher education up to the licenciatura plena level, but also shows that teachers’ full-time dedication to one-school only23 can improve outcomes. This analysis also found that high learning outcomes were frequently associated with teachers’ use of teachers’ guides, teachers’ having high expectations about their students, the extent of curriculum coverage, and teachers’ computer use. Adequate school infrastructure appeared as a critical school factor determining both student’s and teacher’s performance.

While these results are encouraging, differences in school and teacher characteristics can only explain part of the regional dispersion of learning outcomes in Brazil. Place of residency remains the single most important factor associated with differences in student performance (explaining close to 50 percent of the measured differences). As in most countries24, only about 25 percent of the performance differences are associated with the characteristics of the school and teacher, and 25 percent with the family and community. (see Table 2.2). Teachers characteristics help explain 13 percent of observed differentials.

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20 These figures are unadjusted for living costs, but the gaps exceed the likely purchasing power differential between Minas Gerais and São Paulo.

21 These relationships are complex. For instance, teacher from disadvantaged backgrounds tend to study in low quality TIlIs, and then are deployed to school serving poor students, etc

22 Taking into account the experience of other nations such as the US or the Netherlands points to the low quality of teacher education in Brazil, rather than its lack of usefulness.

23 The exact proportion of teachers holding several teaching positions is not known. Comparing the impact on student outcomes of teachers holding a 2nd job in teaching, vs in another profession, would be a worthwhile research topic.
### Table 2.2: Teacher-related Variables Determining Student Outcomes

<table>
<thead>
<tr>
<th>Source/Dependent variable</th>
<th>Teacher Salaries</th>
<th>Teacher Education</th>
<th>Other Factors/ Remarks</th>
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<td><strong>SAEB 97</strong></td>
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<td></td>
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</tr>
<tr>
<td>Student learning</td>
<td>No significant impact</td>
<td>Teachers' general level of education positively correlated</td>
<td>Other key variables:</td>
</tr>
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<td></td>
<td></td>
<td>Specialized higher education degree in teaching: no impact</td>
<td>• Tenure of director</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Teacher's age and tenure in school</td>
</tr>
<tr>
<td><strong>Living Standards Survey (PPV)</strong></td>
<td>An additional year of teacher education would produce the same impact as a doubling of salary</td>
<td>An additional year of teacher education would produce the same impact as a doubling of salary</td>
<td>Combined effect of both would only eliminate 1/3 of observed age-grade distortion</td>
</tr>
<tr>
<td>Age-grade distortion</td>
<td>Positive but limited impact. A one-year reduction of the age-grade gap would require a R$5,000 salary increase</td>
<td>Positive but limited impact. A one-year reduction in the age-grade gap would require a 15-year increase in teacher education</td>
<td></td>
</tr>
<tr>
<td><strong>National Household Survey (PNAD) 1991-98</strong></td>
<td>Positive but limited impact. A one-year reduction of the age-grade gap would require a R$5,000 salary increase</td>
<td>Positive but limited impact. A one-year reduction in the age-grade gap would require a 15-year increase in teacher education</td>
<td></td>
</tr>
<tr>
<td>Age-grade distortion</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Demographic Census (1970, 1980 and 1991)</td>
<td>Positive but limited impact. A one-year reduction in the age-grade gap would require a 15-year increase in teacher education</td>
<td>Positive but limited impact. A one-year reduction in the age-grade gap would require a 15-year increase in teacher education</td>
<td>• The largest differences in teacher salaries (SE/NE) explain only 11% of the age-grade difference (1.5 grade)</td>
</tr>
<tr>
<td>Age-grade distortion</td>
<td></td>
<td></td>
<td>• Improvements in teacher attainment in the 80s and 90s (3.5 grades) explain only 22% of age-grade gap reduction during the period</td>
</tr>
<tr>
<td>Unit of analysis: municipalities</td>
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</table>

*Source: IPEA, 2000*

### ADDITIONAL STUDIES OF TEACHER CHARACTERISTICS AND STUDENT OUTCOMES

While the task of analyzing differences in learning outcomes is universally complex and imprecise, research demonstrates a very strong correlation between learning outcomes and age-grade distortion. For instance, students who are late entrants into the education system have a higher propensity to repeat, get discouraged, and drop-out. This is due to a vicious circle of lower self-esteem, reduced teacher expectations, and declining student performance. For the same reasons, students from disadvantaged social backgrounds who find themselves repeating the early grades have a high probability of falling into the same syndrome. While recognizing that the incidence of age-grade distortion depends on many factors outside the school system, it also unambiguously depends on the quality of teaching and teachers' attitudes. For this reason, the reduction of age-grade distortion in Brazil has been correctly recognized as a key policy lever.
In order to identify policy instruments capable of accelerating or reducing age-grade distortion, this study analyzed several additional databases: the Living Standards Survey (Pesquisa de Padrões de Vida (PPV)), the 1999 National Household Survey (Pesquisa Nacional por Amostra Domiciliar (PNAD)) and the Demographic Censuses for 1970, 1980 and 1991. These studies all confirm the same general findings, i.e., that teachers' level of education has a positive impact on student performance. These databases also suggest a modest relationship between teachers' salaries and student performance (age-grade distortion). However, the magnitude of the effects are in all cases so weak that very large increases in salaries and teachers' education would theoretically be required to produce noticeable reductions in the age-grade distortion.

In interpreting these results, it should be noted that these additional sources, while rich in information on socioeconomic and labor market variables which are necessary to understand contextual and demand-side factors, have serious limitations from an education perspective. The results summarized in Table 2.4 demonstrate that the inferences from SAEB data, are strongly consistent with those obtained from Census, PPV and PNAD. Table 2.3 summarizes the findings, namely that teacher and schools control variables have limited capacity to explain regional differences in learning outcomes.

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Demographic Census</th>
<th>PPV</th>
<th>PNAD</th>
<th>SAEB</th>
<th>Average</th>
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<td>--</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Environment</td>
<td>--</td>
<td>31</td>
<td>41</td>
<td>-23</td>
<td>17</td>
</tr>
<tr>
<td>Child</td>
<td>--</td>
<td>4</td>
<td>6</td>
<td>--</td>
<td>5</td>
</tr>
<tr>
<td>Family</td>
<td>--</td>
<td>27</td>
<td>31</td>
<td>--</td>
<td>29</td>
</tr>
<tr>
<td>Community</td>
<td>43</td>
<td>-1</td>
<td>4</td>
<td>-23</td>
<td>6</td>
</tr>
<tr>
<td>Place of Residence</td>
<td>36</td>
<td>27</td>
<td>54</td>
<td>73</td>
<td>47</td>
</tr>
<tr>
<td>Other Factors</td>
<td>--</td>
<td>--</td>
<td>-5</td>
<td>27</td>
<td>11</td>
</tr>
</tbody>
</table>


Does this mean that a strategy which focuses on teachers is inconsistent with the data? To address this question we sought to reconcile the SAEB, Census, PPV and PNAD results with the consensus, among educators, that gains in learning outcomes can only be achieved by focusing on teachers' competencies and behavior in the classroom.
In all of the studies, teacher proficiency was measured not in terms of competencies\textsuperscript{25}, but based on the crude characteristics of formal qualifications. On that basis, a teacher educated in the rural Northeast is observationally identical to another in the urban South or Southeast. Any difference in performance is likely to be associated with place of residency. Evidence from international sources, as well as from Harbison and Hanushek (1992) for Brazil, demonstrate that teachers’ mastery of the required content knowledge is a major factor determining student learning outcomes.

However, the issue, far from being a simple matter of measurement inaccuracies, can carry real consequences. Career structures and hiring regulations are such that if those two teachers worked for the same system they would in all likelihood earn the same salary, independent of differences in performance. Not only did the studies fail to measure differences in competencies among teachers; as a matter of routine, differences in competencies and performance are not taken into account for career development and incentive purposes. A possible solution found in OECD countries, and which will be discussed later in the report, would require the development of quality assurance systems—Teacher Evaluation, Certification and Re-certification Systems—which reveal these differences in competencies and performance, along with a professional career structured around them.

To summarize, the use of the PPV and PNAD data illustrates the fact that there is no simple solution to the problems of high age-grade distortion. Overall, this chapter has shown that based on available research in Brazil, the three most obvious mechanisms for raising teacher quality—requiring higher levels of teacher education, more years of professional training and increasing teacher salaries—alone cannot be expected to produce student learning gains of the magnitude sought. As argued in this report, only a systemic approach, linking teacher development and incentives to student results and school improvement, will work. The next chapters analyze why this is so and what can be done, beginning with teacher preparation.

\textsuperscript{25} A competency is a set of values, cognitive skills, and behaviors that a teacher has mastered and can mobilize to respond to a particular classroom situation.
CHAPTER III: TEACHER PREPARATION

TEACHER QUALIFICATIONS

Despite a massive national effort at teacher upgrading over the past ten years, the average level of academic qualifications of Brazil's basic education teachers remains lower than in other Latin American countries. Especially striking is the difference in average qualifications between Brazilian teachers and their counterparts in Argentina and Chile at the pre-school level and in the early grades of basic education, the years when the foundation skills are acquired.

In 1998, about half of all basic education teachers in Brazil had tertiary level education. The proportion was only 18.1 percent among those teaching at the pre-school level and 21.6 percent of those in grades 1-4. By 2000 these percentages had increased to 19.4 and 24.6 percent, respectively. However, about 8 percent of Brazilian teachers in grades 1-4 and 13 percent of pre-school teachers were still leigos, i.e., with 8 years or less of formal education.

Table 3.1: Brazil, Average Education of Teachers by Teaching Functions (2000)

<table>
<thead>
<tr>
<th>Level of Education Training</th>
<th>% Pre-School*</th>
<th>% Grades 1-4</th>
<th>% Grades 5-8</th>
<th>Upper Secondary Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Fundamental Education (Grades 1-8) Or Less</td>
<td>13.0</td>
<td>8.1</td>
<td>0.6</td>
<td>0.1</td>
</tr>
<tr>
<td>General secondary education</td>
<td>5.4</td>
<td>3.3</td>
<td>6.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Normal – Secondary teacher preparation</td>
<td>62.3</td>
<td>64.0</td>
<td>19.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Tertiary Education</td>
<td>19.4</td>
<td>24.6</td>
<td>74.1</td>
<td>88.4</td>
</tr>
<tr>
<td>Neither teacher training, nor Licenciatura</td>
<td>0.5</td>
<td>0.4</td>
<td>2.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Teacher training, but without Licenciatura</td>
<td>3.1</td>
<td>2.9</td>
<td>4.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Licenciatura</td>
<td>15.8</td>
<td>21.3</td>
<td>67.2</td>
<td>75.8</td>
</tr>
</tbody>
</table>

Source: SEEC/INEP/MEC

WIDE DIFFERENCES WITHIN AND BETWEEN SCHOOL SYSTEMS

National averages, however, obscure differences across regions and different education systems in Brazil. For instance, as shown below, in 1999 the proportion of grade 1-4 teachers with 8 years or less of education was 10 percent nationally and 0.7 percent in urban Southeast, but reached 34 percent in the rural Northeast. For grade 5-8 teachers, the proportion with complete higher education ranged from 88 percent in urban Southeast to 26 percent in rural North.

The share of teachers with higher education qualifications typically differs by 20 percentage points or more between urban and rural areas within a given region. As a result, the poorest children, who would need better teachers to compensate for less favorable home environment, are in general taught by less prepared teachers. Moreover, within a given state, teachers in the

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26 Throughout the report, the terms "teacher preparation" and "Initial Teacher Education" (ITE) are used interchangeably to refer to the new paradigm of pre-service training. Similarly, the terms "continuous teacher education" and "professional development" are used interchangeably to refer to the new paradigm of in-service training.
state school system typically have significantly better academic qualifications than in rural municipal systems, except for the very large urban municípios.

Graph 3.1: Percentile Distribution of EDC/Preschool Teachers by level of training.
Graph 3.2: Percentile Distribution of Grade 1-4 Teachers by Level of Training.
Graph 3.3: Percentile Distribution of Grades 5-8 Teachers by Level of Training.
Graph 3.4: Percentile Distribution of Teachers in Ensino Médio by Level of Training.

Source: Instituto Nacional de Estudos e Pesquisas, INEP

WHO GOES INTO TEACHING

Teacher Supply and Demand. According to recent INEP estimates, to ensure that all basic education teachers have higher education qualifications, the country would need to re-train and certify at tertiary qualification level the teachers occupying about 1.2 million “teaching positions”\(^2^7\), equivalent to some 55 percent of the total for basic education. The numbers to be upgraded can be broken down as follows:

- For pre-school and grades 1-4, some 157,000 (14 percent) “lay” teachers without upper secondary level qualification, and another 912,000 (80 percent of the total) without tertiary level education/training
- For grades 5-8 and 9-11, about 350,000 teachers (30 percent of the total), also without the LDB-mandated tertiary level qualifications.

Even over a period of 10 years, this would be an ambitious target. More accurate projections are being conducted by each state and municipal systems, as part of an effort to identify future teaching staff demands, as well as in-service upgrading needs.

\(^{27}\) The number of teachers is actually lower, as some may work in several schools and hold more than one teaching position.
Teacher quality begins with the students who go into teaching. According to recent INEP data\textsuperscript{28}, in 1999, student-teachers taking university level pedagogy were overwhelmingly female (92 percent). About 72 percent were studying at night, which suggests that they work during the day, may come from relatively less advantaged socioeconomic backgrounds, are probably tired by the time they go to their teacher training institution, and may lack time for follow up activities.

Before FUNDEF, a steady decline in the average socioeconomic characteristics of students interested in teaching could be observed. Students applying for teacher training programs had the lowest vestibular (college entrance examination) scores, relative to students applying for other undergraduate disciplines; attrition rates while in school were high, evidencing low motivation. In 1996, Gatti estimated that 40 percent of students in licenciatura programs had no intention of becoming teachers and that many others were not sure they would remain in the profession. Today, FUNDEF-driven salary increases are changing the picture. Teacher upgrading programs, particularly in the Northeast, are modernizing the image of teachers. This effect is further reinforced by the more positive image of public education developed in Brazil over the past several years. Finally, high unemployment rates in other sectors have also turned teaching into a more appealing profession, with large numbers applying to enter the career (Minas Gerais is a case in point).

It is important to note that teacher quality issues are fundamentally different in the North and Northeast from the South and Southeast. In states such as Rio de Janeiro, Paraná, Minas Gerais and São Paulo, finding candidates with the right profile (i.e., talented, college-educated, and entrepreneurial individuals with the skills required to be real agents of change: creativity and adaptability; team spirit and leadership, social and communicational skills) should not be difficult as long as they are offered competitive wages, career and incentive structure. But in the North and Northeast, although relative incentives have improved sharply with FUNDEF, the under-supply of qualified individuals—particularly in rural areas and at least in the short-run—remains acute.

HOW TEACHERS ARE PREPARED

Teachers enter the profession in Brazil through a more diverse range of academic routes than in neighboring countries, and quality differentials across institutions are notoriously wide. The major routes\textsuperscript{29} are:

- The Magistério, a secondary-level 4-year program to prepare pre-school and grade 1-4 teachers. In 1999, this program was offered in about 21 percent of secondary schools (i.e., around 4,000 institutions) and “normal” schools. These programs—which are to gradually close down as the LDB’s tertiary education requirements are implemented—have seen their enrollment decline from about 840,000 in 1996 to 519,000 four years later. Their output was about 191,000 in 1999.


\textsuperscript{29} INEP’s Document entitled “Educação Superior: Conceitos, Definições & Classificações” notes (Annex 1) that while the LDB legal framework is being specified by the CNE, for instance through the “Diretrizes Curriculares”, many different interpretations of these broad categories can be found, reflecting a temporary state of flux, or perhaps a deliberate lack of precision to maintain flexibility. To lead to a notable quality improvement, a modern approach such as this, i.e., non-prescriptive in terms of the modalities, needs to be perfectly clear as to the standards expected to be met and the mechanisms to be used to ensure assurance.
- The Licenciatura Plena, a 4-year university-based program which prepares teachers for grades 5-8 and 9-11. Organized along multiple majors, by discipline or areas of knowledge, the Licenciaturas are sometimes offered to students enrolled in Bacharelado (regular undergraduate programs) who also wish to earn a teaching degree; they therefore combine subject matter and didactical training. These programs have been growing in number and enrollments: in 1999, some 400 of them were offered by about 300 higher education institutions in math/science and humanities/Portuguese, with 48,000 and 125,000 students respectively. Teacher preparation is the third most popular career, with students in Licenciatura accounting for 70 percent of graduates in 1999. Provision is mostly private (about 80 percent), except in the North and Northeast, where it is largely public.

- The Degree in pedagogy, initially designed to train teacher educators, researchers and education professionals in basic education is now a 4-year program preparing teachers in early childhood development, grades 1-4 and the pedagogical disciplines for grades 5-8 and 9-11. Nationwide, about 180,000 students were enrolled in this degree program in 1999. Student numbers have increased by 47 percent since 1999, in response to market demand and because it is a relatively easy way of obtaining a university degree.

As noted, the relative weight of these various programs has been changing in response to the LDB. The exact numbers are difficult to estimate, with programs opening, closing, and students in Licenciatura Plena not necessarily opting for teaching. However, a few facts 3 give a sense of the quantitative and qualitative challenge facing the authorities:

- Ignoring the need for new, additional teachers, the number of Basic Education teachers to be re-trained to meet the LDB's tertiary education requirement is high (about 1.2 million teaching functions).
- Mobilizing and giving incentives to training institutions to provide minimum quality in-service re-training and certification to such a large number of existing teachers will be a daunting challenge, especially if one considers the schools' low qualification and the large numbers of teachers located in poor rural areas (i.e., distant from quality training programs).
- The number of teachers required for grades 1-4 is declining, while those in grades 5-8 and 9-11 will continue to increase. One key on-going challenge is ensuring an adequate supply of subject specialists in math and sciences.

**The National Diagnostic on Teacher Education**

MEC recently conducted a thorough analysis of teacher preparation which is summarized in "Referenciais para Formação de Professores" (published in 2000) and led to Proposed Guidelines ("Proposta de Diretrizes") for reforming the sub-sector, still under discussion. Both documents identified key issues with the current system, including the lack of integration between initial and continued teacher education, which should instead be seen as a continuum, consistent with the trend towards lifelong professional development. They characterized initial teacher education (ITE) programs as ineffective: where delivered by normal schools, they are academically weak; and when delivered by universities, they show an excessive theoretical bias. In both cases, school-based practicums or internships are limited, with little connection between theory and practice.

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Very few programs are designed as preparation for a profession, i.e., going beyond skill training to instill competencies into teachers, especially the crucial abilities to reflect on their own classroom practice, to be change leaders and to assess, carefully and continuously, individual students’ progress. Even fewer schools instill in their students the habit of iterating between action-research and practice (an approach successfully applied in Cuba, for example).

The Referenciais found that pedagogical practice in most TTIs remains traditional and frontal, and is a poor preparation for the new “student-centered” and active approaches advocated by the ministry and implied in the new curriculum guidelines. There is little emphasis on teachers’ collaborative work, transversal curricular objectives, or the new roles for teachers in reaching out to the school community or participating in school development planning and school-based management. Training in new technologies is limited. Finally, at the moment there is no evaluation of the quality of the teacher preparation programs either at exit (PROVÃO has not yet been applied to pedagogy courses) or, more critically, in terms of subsequent impact on classroom practice.

INTERNATIONAL TRENDS IN TEACHER PREPARATION

Brazil is not alone in questioning the adequacy of its traditional systems of teacher preparation. Teacher preparation programs are under fire the world over, blamed for poor student learning and school system performance. Wide experimentation is underway with radically new approaches to the content, duration and locus of teacher preparation. Despite the variation in approaches, there is emerging consensus across the OECD and many developing countries on the goals of teacher preparation—the production of a new kind of teacher, equipped not only with deeper and more flexible content knowledge but also a fuller understanding of child development and learning styles, a wider repertoire of teaching strategies and a new set of values, emphasizing respect for diversity, collaboration with peers and continuous reflection on teaching practice, and a capacity to lead change and communicate effectively. A typical articulation of these new goals is found in the OECD literature on teacher competencies.
### Box 3.1: What Teachers Need to Know

<table>
<thead>
<tr>
<th>Content Knowledge:</th>
</tr>
</thead>
</table>
| *Understanding subject matter deeply and flexibly to help students create cognitive maps, link ideas, address misconceptions*  
*Seeing how ideas connect across fields and to life*  
*Making ideas accessible to others, understanding the perspective of the learner.*                                                                                                                                                                                                                       |
| Learner Knowledge:                                                                                                                                                                                                                                                                                                                                                       |
| *Knowledge of child & adolescent development and how to support growth in cognitive, social, physical, emotional domains to interpret learners’ statements & actions and to shape productive learning experiences*  
*Understanding and respect for differences linked to culture, family experience, forms of intelligence, approaches to learning, and the ability to teach in a way that connects with students*  
*Inquiring sensitively, listening carefully, looking thoughtfully at student work, structuring situations to allow students to express themselves.*                                                                                                                                                                                                 |
| Motivating Students:                                                                                                                                                                                                                                                                                                                                                      |
| *Understanding what individual students believe about themselves, care about, and how to give them encouragement.*                                                                                                                                                                                                                                                  |
| Knowledge About Learning:                                                                                                                                                                                                                                                                                      |
| *Deciding which type of learning is most appropriate in specific circumstances, which material to use when and for which purpose*  
*Able to use different strategies for teaching, evaluating students’ knowledge and assessing their learning*  
*Capacity to understand the strengths of individual students*  
*Capacity to work with disabled students*  
*Understanding of how students acquire language (gateway to learning) to build skills and create accessible learning experiences.*                                                                                                                                                           |
| Knowledge About Curriculum Resources and Technologies To:                                                                                                                                                                                                                                                      |
| *Allow students to explore ideas, acquire & synthesize info, frame & solve problems.*                                                                                                                                                                                                                         |
| Knowledge about Collaboration:                                                                                                                                                                                                                                                                               |
| *Structuring student interaction for more powerful shared learning*  
*Collaborating with other teachers*  
*Working with parents to learn more about their children & help shape supportive experiences at school and home.*                                                                                                                                                                                   |
| Capacity to Reflect:                                                                                                                                                                                                                                                                                                                                                      |
| *Assessing own practice and its impact to refine and improve instruction*  
*Continuously evaluating students’ progress to reshape lesson plans.*                                                                                                                                                                                                                                   |


The *location* of teacher preparation has shifted in most OECD countries from secondary-level or normal schools to higher-education institutions, whether at independent institutes or departments within universities. There is a strong trend across the world for teacher preparation to involve an increasingly extensive practices/internship in schools. The most extreme example is England, where, based on the decision of local authorities, initial training may be up to 100 percent “on the job” in primary or secondary schools.

In terms of *design*, two different models dominate in the OECD. The concurrent model, used most commonly for primary teachers, exposes students simultaneously to academic study of disciplines and pedagogical training for a minimum of 3 years. The consecutive model, mainly for secondary teachers, provides discipline-based training first, followed by pedagogical training. These programs typically last for at least 4 years, and a number of countries have extended them to 5 years.

In terms of *curriculum*, a major focus of the best programs is the integration of theory and practice through applied theory and problem-solving, embedded in action-research action on themes, issues and approaches. The complex issues facing teachers today require that they grasp the challenges of “learning for understanding” and “teaching for meaning” and demonstrate
adaptability. The new approach to practice universally involves closer links with schools and guidance from teacher/mentors and tutors. It is considered best practice to give students early exposure to schools to get the “feel” of classroom realities, followed by punctuated block period placement. Teaching practice often accounts for 30-50 percent of training hours and is often supplemented by videotaped student performance in the classroom for replay and analysis with the aid of peers and tutors back in the training institution. In many concurrent courses the weight given to educational/professional training, as opposed to academic subjects such as mathematics tends to be around 40 percent. In consecutive courses, study of academic disciplines typically has higher weight, about 75 percent of curriculum hours, reflecting the importance of content mastery for post-primary teachers.

In terms of control, in the past teacher education structure, curriculum, financing, etc., were entirely in the hands of either the national (or sub-national) government or of the TTIs (where these were private). Today, in most OECD countries studied, TTIs have greater flexibility over course design and delivery, but they are subject to government-set accreditation requirements and periodic accreditation reviews. Government-set teaching standards, and especially teacher initial and advanced certification requirements have a major impact on the design and quality of TTI programs. In the UK and New Zealand, TTIs are subject to regular external inspection. In a relatively centralized country such as France, the newly created Instituts Universitaires de Formation des Maitres, which are public institutions but have autonomy, are in a contractual arrangement with the regional education authorities for the delivery of programs meeting certain criteria defined by the government as employer. In other countries, such as Australia and the U.S., teacher professional associations have developed advanced certification standards, in essence self-regulating the profession. Most of the reforms outlined above are too recent to have had a clear impact and available evaluations are mainly of a qualitative nature. Ultimately, a comparison of six OECD countries plus Cuba shows that they have worked on several, if not all the above parameters influencing initial teacher education, such as raising admission requirements, revising the TTI curriculum, strengthening the practicum, providing induction and supporting research, and introducing TTI external evaluations. Like others, they have found that only a systemic approach can work.

PROPOSED REFORMS OF PRE-SERVICE TRAINING IN BRAZIL

To address the challenges identified in the Referencias, the education authorities have proposed a new institution—Institutos Superiores de Educación (ISE), Higher Institutes of Education. In line with the latest international trends, the proposed institutes would produce a new kind of teacher, someone with: (a) strong and relevant knowledge of basic academic disciplines and the ability to adapt them to students’ capacities and needs; (b) an understanding of, and focus on, the teaching and learning process and its relationship with the broader context; (c) the capacity to resolve concrete problems of classroom practice with a view to promoting student learning; (d) the ability to take students’ socio-cultural and psycho-pedagogical characteristics into account; and (e) the habit of systematically reflecting on her/his own practice, both individually and in teams.


As defined in CONSED Resolution No. 1 (September 30, 1999) and Presidential Decree No. 3.276 (December 6, 1999), the ISEs would offer five types of programs: (i) curso normal superior (CNS) (a "tertiary level normal course") to prepare pre-school and grade 1-4 teachers; (ii) a licenciatura program for grade 5-8 and 9-11 teachers; (iii) in-service training courses for teachers of all levels; (iv) "pedagogical preparation" programs for holders of higher education degrees who wish to teach in grades 5-8 or 9-11; and (v) graduate professional training to teach in ensino básico.

ISEs would be organized flexibly along one of the three possible modalities:
- As free-standing Higher Institutes or schools, managing or coordinating all of the licenciaturas under their responsibility.
- As a unit in a university or university center, with similar management arrangements.
- As a unified coordination of courses delivered in various units of a single institution.

ISEs may be either public or private, and formed either from scratch or by transforming existing institutions. Whatever the arrangement, they will have a formally established managing unit, responsible for formulating, implementing and evaluating the "institutional project" for teacher training, itself to be driven by the "pedagogical project" ("projeto político-pedagógico", or PPP).

Teacher educators in the ISEs will over time be expected to have a post-graduate qualification level (Art.66 LDB); at a minimum, as provided by the legislation, the composition of the teaching corps would feature: 10 percent with master's or Ph.D. degrees; 33 percent on a full-time basis; and 50 percent with proven experience in ensino fundamental. This teaching body will consist of contracted professors and teachers and others "lent" (cedidos) by other institutions.

Admission will be for secondary education graduates. The duration of the CNS and the licenciatura will be 3200 hours (or more) over a 4-year period. This will include 800 hours of practice in schools throughout the course; serving teachers will receive up to 800 credits towards the degree. The curso normal superior and licenciatura will lead to a cycle-specific licenciatura teaching degree, while the in-service courses will lead to a certificate. Only the in-service courses will not require accreditation. Curriculum guidelines are been established by Câmara de Educação Básica of the National Education Council. The legislation also provides for the ISEs pedagogical training courses to be evaluated within five years.

The ISEs are based on a well-conceived and progressive model that, if implemented effectively, could go a long way toward upgrading the academic standards and reorienting the practice of Brazilian teachers. Key to the new model is a strong articulation between theory, practice and applied research and an emphasis on "teaching as a profession", as well as a shift from a supply-driven approach controlled by TTIs to a demand-driven one in which the needs of the school system predominate. Implicit in it is a concept of teacher education as a process of cultural change. The proposal emphasizes the preparation of teachers to teach transversal curriculum objectives (e.g., gender, democracy, the environment) and instrumental competencies (critical thinking, information processing, team work, communications, etc), as required for the workers of the 21st century who will be confronted with a highly flexible and rapidly changing labor market, and huge amounts of information. OECD (Netherlands, France) and Brazil's neighbors in the Southern Cone (Argentina, Chile) have opted for a similar curriculum design.

The ISEs recognize the need to take into account teachers' previous experience and training in order to allow competent professionals from other fields to become teachers. Finally it points towards a holistic approach to "the teacher" (a well-rounded personality) and "teacher training" (a "whole institution" approach), in line with most recent literature in OECD and LAC.
Finally, the model wants serving and future teachers to be more proactive in the design of their own training programs and the management of their professional development.

For the ISE concept to achieve its full potential, a number of conditions will have to be met. First, it assumes that existing programs will be able to restructure, re-staff and reorient themselves substantially in a short period, developing a wholly new curriculum and, even more importantly, a significantly different ethos and teaching practice. This kind of institutional flexibility and dynamism has been notably lacking in existing tertiary-level programs, which tend to have low staff turnover, curriculum inertia and relatively few faculty with recent experience teaching in or managing schools.

Second, it is not yet clear how the ISEs will meet the needs of the poorest states and municipal school systems in rural and disadvantaged areas. These systems today cannot attract teachers with tertiary-level degrees and this qualification may remain unrealistic for these areas for the foreseeable future. A promising alternative approach are São Paulo's CEFAMs. Although currently a secondary level program, these teacher preparation centers have many of the design characteristics to meet the needs of rural and disadvantaged areas. Similar programs in Uruguay and Mexico have been successful in developing relatively modest but high quality regional teacher training centers that recruit local bright young secondary school graduates for whom teaching is an attractive alternative and who are committed to staying in their region of origin. Ensuring the development of these kinds of non-university-based but high-quality programs within the ISE framework is important.

<table>
<thead>
<tr>
<th>Box 3.2: São Paulo’s Centers for Teacher Training and Upgrading (CEFAM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>São Paulo's 54 CEFAMs serve 20,000 students and offer a 4-year secondary level pre-service training for pre-school and grade 1-4 teachers that departs from the traditional normal school model in several ways. First, students receive scholarships which allow them to study full-time during the day (rather than the typical model of taking night courses while working full-time). This has contributed to motivating students and improving retention. Second, out of 1,000 hours per year, students devote 300 hours to in-school supervised practice and 400 hours to curricular reinforcement. Third, the school has a curriculum composed of core and elective courses which integrates transversal objectives. There is a strong focus on early literacy teaching and CEFAM trainers model interactive teaching modes and collaborative work practices. The CEFAMs are a holistic model of teacher training with scholarships, a full-time program and some exposure to culture. Other countries such as Uruguay have recognized the benefits of such a program in order to draw, retain and train students from disadvantaged backgrounds as future teachers for schools in similar communities (such as remote rural areas or low-income urban areas).</td>
</tr>
</tbody>
</table>


The ISE legislation provides for three different institutional modalities, reflecting an appropriate desire to accommodate the heterogeneity of the country. But even more provider diversity may be desirable in a country as large as Brazil, for example in the form of an entirely virtual institution that would pick up the best courses wherever they may be offered. Important initiatives along these lines already exist. One case in point is UNIREDE (Universidade Virtual Pública do Brazil), a consortium of over 60 public higher education institutions launched in August 2000, whose ambition is to become a leader in the field of teacher education (cf. www.unirede.br). Another model to be considered would have different institutions collaborating on the design and delivery of a single program, as in the promising experience of Ceará’s licenciaturas breves program.
This accelerated program, designed to help state and municipal ensino fundamental teachers complete secondary level degrees, is run by three state universities (contractors and project managers)—the UECE, UVA and URCA—under agreements signed with municipal governments (the clients). As employers, the latter specified their requirements and negotiated the content and modalities. The UECE program accommodates teachers from 55 municipal governments in an innovative format which: (i) integrates in the curriculum the time spent teaching by those serving teachers; (ii) provides for supervised practice to ensure that they build an understanding of teaching and learning theory starting from their own experience in the classroom; (iii) complements this with weekend courses and activities organized by the university in the client municipality, two to four hours of individual practice observations by the mentor, group work to reflect on practice, material for reinforcement exercises; and (iv) includes the drafting of a thesis at the end of training. The university faculty who have participated in the program claim that it has changed their perspective on what school teachers need. This program embodies many good practices, such as the scope for cooperation across different provider institutions, client orientation and flexibility in course design and delivery, as well as new avenues for integrating theory and practice.


Finally, a number of universities, especially at the federal level, remain concerned about the proposed shift from a formal qualification to a professional competency approach, and from a discipline-based ITE model to a more varied, integrated menu of teacher preparation activities. They also express concern with the reduced emphasis on traditional research. An excellent entry point might be the participatory development of teacher standards via a “professional conversation” between university staff, MEC officials and the profession about what a good teacher should know and be able to do in specific Brazilian context(s), to feed into the design of the new programs.

POLICY OPTIONS

With the ISE legislation, the ministry has set out a clear vision for reform of teacher preparation that moves substantially in the right directions. A sound framework has been established, but it is natural that many questions around the implementation of this new vision still remain to be worked out, the most crucial of which is how quality standards will be assured. A reform of the process for accrediting teacher education courses, programs, and institutions has already been legislated (cf Chapter I); the focus now shifts to how to implement it, and how it might mature in the future. Teacher standards, which in many countries work as an important backwash influence on TTIs to shape their program content and quality, have yet to be set (the Referenciais and the Proposta de Diretrizes correctly outline the desired teacher profile and practices, i.e., rather than establish performance standards35. How these issues are handled will largely determine whether the new ISEs truly elevate the quality of teacher preparation, rather than simply (as in many other countries) elevating its formal level and locus. The following section reviews policy options drawn from the experience of other countries that could help ensure the success of the ISE reform.

Accreditation

Creating an effective accreditation mechanism for ISEs is key, especially where existing low-quality programs are trying to transform themselves. The revisions of SESu’s program accreditation, initial authorization and recognition procedures described in Chapter I are fully in line with international trends, under which accreditation is increasingly an “accompaniment”
process by and with peers. Besides continuously building its HR capacity to deliver these evaluations, including the use of PROVÃO results as an input into SESu’s decisions (see next section), Brazil might want to examine the recent (May 2000) accreditation standards issued by the U.S. National Council for the Accreditation of Teacher Education Programs (NCATE), which introduce an evaluation of classroom performance of graduating teachers, in addition to the usual facility, faculty and program checklists (see Box 3.4). Aligning program accreditation standards onto standards of good teaching, and not just of TTI capacity, could enhance the impact of a systemic effort to improve the quality of teachers and teaching.

### Box 3.4: Accreditation of Teacher Preparation Programs in the U.S.

**What is accreditation?** The essential function of accreditation is to provide professional judgment on the quality of the education unit—school, college, department, etc.—preparing teachers and other professional school personnel and to encourage its continuing improvement. Accountability and improvement are at the core of NCATE’s mission. Based on the principle that all children can and should learn, NCATE standards define what accredited institutions should do, what their graduates should be able to do and the implications in terms of training curriculum.

**What is NCATE and what does it do?** Created in 1985, NCATE is an apex organization of 30 regional or specialized accrediting agencies. It sets accreditation standards and procedures, conducts institutional reviews, trains those who do them, determines the accreditation status of the institutions, and publishes a biannual directory of accredited units. This provides assurance to the public that accredited units meet national standards of excellence. NCATE’s latest standards (1995) address four categories—design of professional education, candidates in professional education, professional education faculty and unit for professional education. There are 20 standards and 69 indicators, which are to be used by the reviewed unit in its ongoing renewal and improvement activities. Because NCATE takes a holistic approach, a unit showing deficiencies may be denied accreditation even though it has met all the standards.

**What is the process of accreditation?** The process is based on a voluntary peer review by a Board of Examiners (BOE). Interested units must first apply for candidacy. If selected, the units have about 18 months to meet ten pre-conditions before the visit of the BOE. During that period third parties (graduates, parents, communities) are formally invited to comment on the unit in writing. The reviewed unit submits an institutional report to precede the on-site review by a BOE comprised of five to six members. The examining team conducts interviews, consults materials and may call additional experts. They produce a report which, after comments by the applicant, is submitted to the Unit Accreditation Board for final decision. The applying unit may receive initial or continuing accredited status (a five-year cycle) or accreditation with stipulations or probation. Accreditation may also be denied or revoked. All decisions are subject to appeal and communicated to the United States Department of Education. States, which are responsible for licensing, may enter into a partnership with NCATE under a variety of flexible arrangements. Six states require that all TTIs, public or private, be accredited by NCATE. Half of the states require NCATE accreditation for their public TTIs only. On the other hand, a TTI may apply for accreditation even if located in a state that does not formally require NCATE’s seal of approval. The council is also working with the states and the Education Testing Service (ETS) to harmonize their (performance-based) licensing standards and tests into a seamless web. Trade Union representatives participate in in-state visiting teams.

**Governance and Evaluation** - NCATE has a number of governing boards: the Executive Board (oversight); the Unit Accreditation Board; the State Partnership Board; the Specialty Areas Board and the Appeals Board. In turn, each of these has a number of committees. For example, the Unit Accreditation Board has a process and evaluation committee, a standards committee, a BOE and a third year (mid-term) review committee. Each of the institutions visited is asked to evaluate the process, as an input into NCATE’s self-evaluation.

**Incentives** - Only a handful of states (North and South Carolinas, Indiana, Tennessee) have introduced financial incentives to program accreditation, typically as reimbursement of the cost of accreditation. There are no ex-ante incentives. A number of states require a graduate degree from an accredited institution for teacher certification.

Source: National Council for the Accreditation of Teacher Education—NCATE.

Accreditation of teacher education programs may be the responsibility of a national government agency (UK), state-level authorities (Australia) or a combination of regional authorities and a
professional association (United States). In a country as heterogeneous as Brazil and given the number and diversity of ISEs envisaged, the current practice of federal level, renewable accreditation is appropriate to ensure across-the-board minimum quality standards. Where institutions are mature and incentives are in place to shift the focus from minimum standards to the search for excellence and continuous improvement, academia and the states could play a role, within a clear national framework.

**Ex-Post Program Evaluation—PROVÃO**

In 2000, the MEC administered the PROVÃO to students graduating from a number of “Licenciatura” programs, including future teachers in specific disciplines, and in 2001 proposes to include the pedagogy courses in the test. As powerful as this instrument may be, it has its limitations in terms of measuring how TTI courses prepare teachers in the non-cognitive areas (know-how) which are critical for making an impact in the classroom. It is important to include candidate performance among SESu’s program accreditation standards and make sure classroom observations carry an appropriate weight during the peer visits.

**Teacher Standards**

A strong teacher certification process, based on clearly-defined standards for teaching, is a condition for recruitment in public schools in many countries.

In Brazil, given that some 80 percent of teachers are trained in private institutions and that public school systems employ about 85 percent of the teaching force, it is perhaps especially critical to introduce, as envisaged by INEP, a rigorous initial and periodic certification process, based on reasonably demanding standards, as discussed further in Chapter IV (on teacher management). Such a mechanism would send the TTIs a powerful message as to what type of teacher they are expected to produce.

**SMOOTHING THE TRANSITION TO ISES**

The transition to ISEs will not happen overnight. The “period of adjustment” during which all of the above issues are worked out will inevitably produce a fair degree of confusion and even lapses in quality and, possibly, teacher output. A number of possible external instruments could help the government manage the transition, but ultimately the reform will need to be internal to the TTIs, their philosophy, organization and modus operandi if it is to achieve and sustain the desired in-depth change in teacher classroom practices.

First, since some of the major providers of training at the tertiary level are public universities which are funded by state or federal governments, employers have the option of creating direct and powerful incentives for these institutions to adapt to the new model through performance contracts reflecting the new standards and tied to discretionary funding (either part of existing funding allocations or future increments).

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36. The students in the *Licenciatura* programs belong to all types of institutions, public, private, university-level or not, profit-making or not.
Second, the government could offer positive incentives to any institution, public or private, willing to reform its teacher education program based on the agreed standards. This was done in Chile in 1997 to entice autonomous universities to adopt the initial teacher education reform desired by the government. A competitive fund of US$25 million was established and eligible tertiary institutions were invited to compete for support on the basis of proposals responding to criteria defined by the authorities. Some 35 institutions competed in two rounds and 17 were selected. Since then they have formed a learning community of practitioners who meet regularly to exchange experiences.

Third, the federal ministry has an important role for technical support, orientation and capacity building. For example:

- ISEs will need to recruit and train a new cadre of teacher educators who balance academics with hands-on, student-centered practice. MEC could help to define the required teacher competencies in the context of the national standard-setting exercise.
- New (or reforming) ISEs could benefit by forming networks of TTIs and schools interested in innovating and collaborating in the development a fresh approach, leaving behind the authoritarian, isolated, “transmission” or “deficit” teaching model and integrating new research findings such as those discussed in Box 3.5. MEC could play an important role in facilitating partnerships and in bringing to the attention of TTIs successful experiences such as the French *Ecoles d’Application*, the U.S. *Professional Development Schools*, and teacher colleges in the Netherlands.
- The technical support already provided by SESu to the states of Pernambuco, Goianas and Roraima makes it possible to concretely identify and address the practical obstacles to adopting and implementing the strategy.
- The Workshop on Quality Assurance organized by MEC with support from the World Bank in September 1999 is another example of MEC’s information dissemination and capacity-building roles.

Given the huge numbers to be trained, it is questionable whether conventional methods will suffice. Brazil is a leader in the use of technology and distance education to train teachers (*Proformacao, TV Escola, Proinfo*, etc). It would be important to extend the culture of evaluation to all these programs for continuous improvement and to nurture contact with other pioneers in the field (Australia, Korea, the U.K. Open University, etc.) Encouraging such “cutting edge” institutional approaches within the ISE framework would help ensure and expand its long-term impact.

Ultimately, however, in order to achieve the in-depth changes sought in teacher behaviors and values, the reform process will have to go to the core of the teaching and learning process in TTIs, schools and classrooms. Box 3.5 below illustrates how recent research findings can inform this process.

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A good example can be found in Tjeerd Plomp & Alfonsten Brummelhuis, "Introducing Information and communication Technology in teacher education in the Netherlands: a strategy of vision, courage and care" (1999), University of Twente, the Netherlands; see also de Moura Castro, Claudio, "Education in the Information Age" IADB (2000).
Box 3.5: Operational Implications of Recent Research for Teacher Professional Development & Behavior in the Classroom

In the past 30 years, our understanding of learners and learning has improved dramatically, with profound implications for the development of teachers and the design of effective learning environments. Instruction in the teacher training institutions (TTIs) is supposed to model the "vision" desired for the classroom, along some of the key principles outlined below. In reading them one should bear in mind that teaching is profoundly culture bound, while learning takes place in predictable ways.

* Constructivism or "meaning-making" theory tells us that knowledge is not transmitted passively, but constructed by the learner, starting from his/her present experience which guides representations and filters new experiences. Implications: In the classroom, the role of the teacher is to help the student link his/her prior knowledge to the new one, and to engage him/her by creating exciting, relevant, active learning situations which provide opportunities to correct misperceptions, experiment and have a dialogue, conduct action-research to test hypotheses, and involve the community to increase social capital and intensify exposure to different forms of learning. Differentiated pedagogy is key, especially to reach out to the more disadvantaged students. For TTIs, this means including in the program courses on the phases of cognitive development, on the background of different types of students, on the various forms of intelligence and learning styles, and on developing listening and questioning skills.

* Learning is as much a socially shared undertaking as an individually constructed one. Teachers learn best in professional groups and networks. Implications: Create "learning communities of practice" linking TTIs and schools, for interaction on programs & standards, feedback, supervised internships, technical assistance, applied research, etc. Within schools, creating the "space" (= format and paid time) for teamwork and collegial decision-making, experiment with team teaching, build partnerships with parents, among schools within a cluster, schedule monthly professional meetings with a concrete agenda. Link schools with regional teacher support centers. Install internet access at least in these centers. Such communities create a sense of shared purpose and professionalism in looking for better standards and practical solutions.

* Learning is about understanding & applying one's new knowledge to different contexts, not rote memorizing. Implications: Many teachers find this difficult to do. This is why Teacher preparation programs should offer training in a large variety of teaching skills and strategies. This would make it possible to approach the same problem from different angles, to have differentiated pedagogical responses to match the diverse learning styles of children, and giving student-teachers early exposure to classroom reality. In the classroom, new learning material must be related to students' experience through dialogue/narration/acting/paraphrasing, projects in the community, real-life problem solving, hands-on exercises.

* Assessment is key to measure progress and guide practice through feedback. It should be aligned onto clear curricular and teaching standards. Implications: In TTIs, teachers should be trained to be assessment literate, i.e., at a minimum capable of interpreting test results and design corrective strategies and where possible capable of designing their own tests. Errors are no longer seen as something negative, but as signposts to guide learning strategies and adapt teaching. In schools, Directors should learn how to give constructive feedback to teachers, and teachers to students. In the classroom, assessment should be formative rather than summative, measuring understanding and application rather than memory.

* Motivating factors include the ability to reflect, personal goals, and the characteristics of the learning task. Implications: Some times it takes a shock treatment for teachers to take a fresh look at their practice. In schools, joint strategic or day-to-day planning & problem-solving is a morale booster for teachers. Both for schools and TTIs, preparation of a development plan ("Projeto politico-pedagogico") can provide such a "space". TA to help them "get out of the box" is important: otherwise, we all tend to re-do things the way we've been doing them all along. Incentives which rewards results (taken in a broad and not narrowly cognitive sense), although initially resisted, may well gradually attract a new type of teachers. Improving the image of teachers while holding them accountable works better over time than publicly making them responsible for all the systems' faults.

* Teaching as a set of complex behaviors, rather than a toolkit of tricks and routines. Implications: In the classroom, practice should be informed by research and theory, and theory should be tested by practice in an iterative process. Younger teachers have a fresh outlook and should be given the opportunity to question what they see when it is at odds with what they have learned during their preparation. The modus operandi in the school should include enquiry, problem-solving, action-research, at an appropriate level of difficulty. The TTIs should prepare teachers accordingly, teaching them discipline-specific content and didactical knowledge -- a cognitive roadmap to guide assignments, assessments, and interaction in the classroom" -- rather than general teaching methods; they should emphasizing intellectual rigor rather than techniques or processes, giving student-teachers the opportunity to interact with seasoned professionals, pushing their experiential learning. In poor areas, this can begin with only a few simple teacher behavioral indicators.
In sum, continuing to specify, beyond the existing frameworks, what a good teacher is and what a good teacher initial education means in Brazil, will be key to building consensus, giving a sense of direction to focus efforts and resources, and designing appropriate incentives. Global experience suggests that the process of standard-setting, like the consultations held to prepare the Referenciais and the Proposta, is most successful when it is participatory, involving the teaching profession along with the regulatory bodies/employers. The federal authorities have demonstrated a keen awareness of the importance of stakeholder ownership to ensure that standards do not represent a bureaucratic imposition from above, but rather a challenging yet realistic and technically sound set of expectations, to which implementors will be committed because they have been involved in their definition. As it unfolds, this report will show how using a continuum of standards – from curriculum to teaching to program accreditation, teacher certification and career structure can contribute to aligning teacher policies, generate synergy between them, and increase the likelihood that the national educational goals will be met.
CHAPTER IV: TEACHER MANAGEMENT

Even the highest quality initial preparation cannot guarantee a teacher's effectiveness in the classroom. A well-prepared teacher arrives on the job with solid content knowledge, a good understanding of child development, and having observed and to some extent tried out a variety of teaching strategies. But the degree to which a teacher is motivated and supported to use these skills depends crucially on the environment at the school level and more broadly across the school system that employs him/her.

Surrounded all day by their students and with few opportunities for interaction with their peers, teachers must adjust to a new isolation. The complexity of the challenges encountered in the classroom far exceeds the skills acquired through discipline-based courses. If there are no other teachers in the school (i.e., rural multi-grade) or when other teachers are unsympathetic, threatened by a better-trained newcomer, or simply older and too busy, opportunities to talk frankly about problems or learn new techniques are often limited. School directors span a wide range of management styles and personalities, and research across many different countries documents the difficulties of schools whose directors are under-prepared, controlling or insecure.

In the broader system, contracts may be unstable, salary payments late and opportunities for professional development limited—all legitimate sources of career frustration which inevitably sap motivation. And, ultimately, teachers may perceive that the financial and psychic rewards for good performance are disproportionately small or even non-existent. Conversely, in virtually all school systems the world over, teachers soon learn that there are no real sanctions for weaker performance or just “getting by”.

Recognizing that these are the crucial determinants of the return on a teachers’ training and skills, school systems across Brazil are in flux, seeking to promote “whole school development,” identify and support more competent school directors, and to tighten and improve performance oversight, rewards and sanctions.

TEACHER MANAGEMENT AT THE MICRO LEVEL

School Organization and Management
In Brazil one finds a wide spectrum of school governance models. In the state of Minas Gerais, which has pioneered reforms to decentralize governance, schools enjoy a broad measure of autonomy. Directors are pre-screened by the state secretariat of education on the basis of qualifications, but the final selection is made by teachers and the community on the basis of candidates’ proposals for the school development plan (Planos de Desenvolvimento da Escola or SDPs). An elected council manages schools with teacher, parent and student representatives. They have flexibility in the area of pedagogy and for part of curriculum decisions. They can select their own books, manage a small discretionary budget and have access to competitive funding to introduce pedagogical or managerial innovations in response to a self-diagnosis of their situation. A fairly similar model exists in Paraná. A number of other states have elected school-level councils, although usually with fewer explicit powers and more limited budget than in Minas.

However in many areas, school governance is more traditional. The 1997 “A Call to Action Report”38 found that many schools in the Northeast, for lack of leadership, were not in a position

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38 “A Call to Action – Combating School Failure in the Northeast of Brazil,” document of the World Bank, 1997
to articulate a vision centered on student learning. Until the LDB very recently instituted competitive recruitment, principals selected by mayors on the basis of patronage led municipal schools in many areas; nepotism was not uncommon. Few schools had participatory management, and neither teachers nor principals valued peer observation or exchanges, or had high expectations for students. Student discipline problems seemed to distract everybody from instruction. Teachers’ preparation was limited, and their practice was weak. More fundamentally, absenteeism was high, leading frequently to students’ loss of interest and dropout. Parents had little involvement in the schools, claiming that they were only approached for fundraising. Parents of failing children, often poor and less educated, lacked the confidence to challenge teachers’ judgments or even to approach them for advice.

Most schools are between these two extremes: not all the schools in Minas Gerais or the Southeast are truly effective, and the situation in the Northeast has improved under the combined impact of the LDB, FUNDEF, the World-bank financed Fundescola Project, and numerous national, state and municipal initiatives, particularly in progressive states such as Ceará.

Two key factors at the school level that promote teacher effectiveness are: (i) the existence of support mechanisms to facilitate schools’ and teachers’ continuous learning, which have been found to correlate strongly with student learning; and (ii) a system of school accountability to balance autonomy. In many parts of Brazil, both aspects need more attention. Pedagogical support is required on a continuous basis to ensure coherence between central policy and the classroom, to identify and satisfy training needs, to stimulate and disseminate innovation, and to advise on and assist with the development and implementation of SDPs. More often than not in Brazil, a school’s main source of contact with the system is an inspector whose visits are irregular and infrequent, and lean on the side of administrative control rather than support.

TEACHER MANAGEMENT AT THE SYSTEM LEVEL

Effective management of a teaching force spans a range of issues from recruitment, initial orientation, and deployment to supervision, retention, career sanctions and rewards. Brazilian systems face challenges in all of these areas.

Recruitment

Historically split governance and unclear lines of accountability due to the superposition of several school systems in Brazil encouraged patronage relationships and the recruitment of under-qualified staff. Particularly at the municipal level, schools suffered from the distractions caused by political campaigns and personnel turnover, creating a “culture of discontinuity” at odds with the longer time horizon and stable policies that are important in education.

In an effort to address these issues, the LDB (Article 67) introduced the principle of competitive, transparent hiring for all education professionals. The state of Ceará has been the first to apply this principle in an exemplary manner as described in Box 4.1.

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39 The support side is discussed in the next Chapter.
In a move unique in all of Brazil, the state secretariat for education in Ceará reached an agreement with 83 percent (153) of the municipal governments to join with the state government in organizing a single, unified concurso for the competitive recruitment of new teachers and the re-certification of the existing teaching staff. The idea was twofold: (i) to use the more competitive salaries made possible by FUNDEF but reserved for teachers in the civil service as an incentive to attract more qualified teachers for the municipal systems; and (ii) to harmonize the level of competencies of teachers across state and municipal schools. The competition was based on teacher standards developed for the purpose. The two-round competition, which attracted some 45,400 state and 8,700 municipal applicants, identified 30,000 suitable candidates (with at least secondary-level teacher training) who are being gradually integrated in the teaching cadre. The concurso único contributed to rationalizing municipal teacher recruitment, making it more transparent and democratic, and addressing the imbalance between state and municipal teachers.

Contracting and Deployment
Overall, teachers both in the public and private sector enjoy more job stability than most comparable professionals do. The proportion of tenured civil servants among public school teachers is higher (67 percent) than for other public sector categories. The proportion of private school teachers with formal contracts (74 percent) is also high. However, in most systems a significant number of teachers still work on short-term, non-regular contracts, and the management of this "second tier" is an issue. Due to poor planning, in many cases the teachers only hear where they will be posted a few days ahead of time and sometimes after the start of the school year. The short duration of assignments – as little as one week -- and lack of a supporting structure means that they cannot develop a commitment to the school and their students and do not have time to invest in the pedagogical teamwork which is one of the keys to better teaching.

A second issue, a relatively silent one in Brazil, is the absence of systematic policy to ensure that the most at-risk schools—in remote rural areas or poor urban slum areas—are staffed with reasonably competent staff. Although FUNDEF has created the financial means for recruiting more qualified teachers in these areas, complementary career development incentives are required to effectively attract and retain competent professionals in hardship areas.

Finally, most states and municipalities lack adequate education and personnel Management Information Systems (MIS), including registers of certified teachers to which all schools (states and municipalities) could have access when recruiting. Some lack key information for human resource policy decisions; many systems are still not computerized. In some states, personnel data is maintained by the state secretariat of administration, not the secretariat of education, and does not include basic data required by education managers, such as teachers' level of posting. Among the state systems analyzed, the education secretariat of Rio de Janeiro, which administers a large, complex, decentralized system, encounters great difficulties with the planning and control of its human resources.

Initial Orientation and Supervision
The first phase of a teacher's career is described by the Referenciais as a "reality shock". Fresh graduates from teacher education programs, few of whom have had adequate classroom exposure, are frequently overwhelmed by the complexity of the decisions to be made in the classroom, the multiplicity of tasks to be performed, and student discipline problems. Where there is no pedagogical teamwork, they lack the opportunity to observe, be observed by, or get guidance from, more experienced colleagues playing the role of mentors. This is a period in which freshly graduated teachers could contribute to school renewal if given a chance to question what they find. But in the absence of

<table>
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<th>Box 4.1: Ceará's Concurso Único</th>
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appropriate channels and encouragement, many teachers lose their motivation. The same forces ply on serving teachers returning re-energized from an upgrading course.

The lack of a systematic process to mentor or coach beginning teachers during the first year or two makes this period of their career more difficult than it needs to be, and may have a lasting impact on morale and performance. This is why the LDB and the Referenciais provide for the establishment of an “induction” system, as practiced in many OECD and East Asia-Pacific countries. Since the induction process proposed by the Referenciais is to be probatory, it could form one of the bases for the teacher certification system contemplated by the authorities.

**CAREER PROGRESSION**

The critical challenge for education managers is to ensure that teacher rewards (both monetary and non-monetary) are linked to evidence of teacher effort and outcomes in the classroom. The vision underlying the LDB and the FUNDEF is that the career structure should discriminate between good and poor performance and reward them differentially. CNE Resolution no. 03/97 established that incentives for the teaching profession, beyond automatic rewards based on formal qualifications and tenure on the job, should be based on teacher quality standards, and periodic evaluation of a teacher’s competencies. But, implementation of the Career Plan (PCC) requirement has proven difficult. This is due partly to the absence of a teacher quality assurance system, and partly to a lack of consensus among stakeholders on the implementation of the PCCs.

**CAREER PLANS**

To clarify some of these issues, a sample study focusing on the structure of the PCCs and their actual implementation was conducted in the states of Ceará and Rio de Janeiro. The study found that the federal legislation requiring new PCCs was introduced in all of the three municipalities studied in Ceará, but only in one—São Joao de Meriti—of three municipalities studied in Rio de Janeiro. It also noted that while the PCCs of Ceará (states and municipalities) incorporated the concept of performance evaluation, nowhere has it been fully implemented yet.

One of the main challenges facing Brazilian education systems today is the effective implementation of a comprehensive Teacher Career Plan, which combines incentives for continuous professional development, and recognition of better performance. The federal legislation emphasizes this concept, but its implementation in the human resource policy and management of each municipal and state system will require further studies, discussions and negotiations with the teachers. Key issues are the following:

(a) A pre-requisite for a merit-based teacher career is the definition of clear professional quality standards and adequate mechanisms for periodic performance evaluations against said standards, as provided for by the CNE.

As far as standards are concerned, Brazil is on the right track. In principle, the logical sequence for building an architecture of standards is curriculum→teacher→teacher education. Brazil has

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40 A Quality Assurance framework can be defined as a set of instruments of pressure and support articulated to bring coherence between policy decisions and what happens in the classroom. The tools vary with the degree of decentralization of the system.


42 Worldwide there is ambiguity about the concept of teacher performance. Stakeholders with a market perspective, typically politicians and parents, want to measure it vis student outcomes, especially test scores, while the teaching profession prefers to base it on evidence of competencies known to have an impact on student learning, as well as effort, rather than the final result. The career models considered as progressive combine those two perspectives, in varying proportions.
started the process for the curriculum: a national curriculum framework, the PCNs, has been legislated, and has already been adapted in a number of states (Parâmetros Curriculares Estudantis, or PCEs). For teacher preparation, the Referenciais and Proposta de Diretrizes are the national framework. For true teacher standards, further work is needed to elaborate on the Referenciais and the Proposta that set out broad competencies. It is necessary, however, to break these down into components and identify explicitly the measurable, or at least observable, skills and behaviors that will constitute a quality teacher (see last Chapter). It should be recognized that this is a lengthy process and that the product needs to be continuously revised.

The introduction of performance evaluation, on the other hand, is a theme still hotly debated -- in Brazil as in many other nations -- among teachers, their professional associations, and managers. A fair summary would indicate that the existing PCCs lack credible performance evaluation and reward mechanisms.

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**Box 4.2 Best practice in teacher appraisal and evaluation**

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<th>Based on international literature on teacher routine appraisal (to guide practice improvement) and high-stake performance evaluation (for initial and periodic certification and licensing, or for promotions), a “fair and credible” system should feature at least the following characteristics:</th>
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<td>It should be <strong>aligned onto clear standards</strong> of “what a good teacher should know and be able to do” at different stages of his/her career. These teaching standards should (i) be based on the curriculum requirements for students; (ii) reflect the different levels of performance expected from teachers at different stages of their career – beginner, growing, and distinguished. The standards should also be the result of a collaborative process between the authorities and the profession to ensure that they are both sufficiently demanding and realistic. To be useful, they should be embedded in the context of the subject matter and illustrate the knowledge and the practice that count as meeting the standard. Finally, they should be both specific enough to guide teachers and their evaluators, and flexible enough to leave room for contextualization, individual styles, etc.</td>
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<td>It should <strong>balance growth with accountability</strong>, reflecting: on one hand, the research finding that teachers need continuous professional development as well as support from their peer and supervisors; on the other hand, the legitimate right of administrators, politicians and parents to hold teachers responsible for “learning for all”.</td>
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<td>It should address the <strong>specific needs of teachers in three dominant situations</strong>: (i) the pre-certification teacher; (ii) the certified teacher following a normal growth path; and (iii) the struggling teacher.</td>
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<td>It should <strong>capture all the dimensions of good teacher performance</strong> – knowledge, values, behaviors – as specified in the standards. This requires a multifaceted type of evaluation – cognitive tests, classroom observations, conversations with supervisor, portfolio, expert peer evaluation, parent survey student scores.</td>
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<td>It should be <strong>reinforced by an incentive framework</strong> – career and compensation structure, professional development opportunities – which encourages efforts in implementing the standards and rewards results in the classroom, but also sanctions persistent underperformance due to incompetence or lack of interest (statistically representing 2-5 percent of the teachers). The support system should be continuous and should link individual growth efforts with school improvement strategy. The system of sanctions (warning, probation, dismissal) should be incremental, and only be triggered when all positive incentives (extra training and mentoring) have been exhausted following due process.</td>
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*Source: Based on research from Australia, the UK, and the US.*

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43 The controversy revolves around three points. Teachers object to excessive reliance on a single, reductionist measure of their performance. Pointing out that testing is a fallible technology, they argue that submitting them to tests would only assess their cognitive skills, and using student scores as a proxy for their performance would not recognize the complex relationships involved in the teaching and learning process, and would put at a disadvantage teachers serving at-risk children. Teachers also fear a high degree of subjectivity when appraised by a single supervisor. These concerns are exacerbated when the resulting decisions are high stakes, involving promotions and/or salary increases.
One avenue worth exploring might be for Brazil to incorporate in the PCCs, in addition to what has come to be called a “professional career”, the concept of evaluating and rewarding teachers for their contributions to pedagogical teamwork and their school’s progress towards the goals of its development plan (the weight to be given to student results could vary depending on context). Such a multi-faceted performance contract holds the promise for creating a fair system that could offer individual career development opportunities and differentiated incentives while rewarding successful collaborative work. A growing international consensus is emerging that this is the way to go. Chile pioneered the team approach with its innovative “school-based merit awards” system (Sistema Nacional de Evaluación del Desempeño de los Establecimientos Educacionales Subvencionados, SNED, (see Box 4.3), while the UK and the province of Ontario (Canada) illustrate the more recent trend, with models combining the two features, team and individual evaluation.

**Box 4.3: Chile’s System of Merit Awards to Schools (SNED)**

SNED is a system of merit awards to all the primary and secondary school teachers demonstrating that they have improved the quality of Education. It aims at stimulating and rewarding school practices which support and promote the reform process while improving the information base for educational decision-making. The reward goes to the entire school, not individual teachers.

The design of SNED incorporates lessons from world-wide experience with merit pay, which suggest that:

- Financial rewards are more effective when directed at the entire teaching team in a school rather than individual teachers because this encourages collaborative work;
- A merit-pay scheme should also address potential perverse effects such as the “free-rider” problem, discrimination against disadvantaged students, etc.;
- The eligibility criteria and the evaluation system should reflect the desired teacher behaviors and school characteristics; and,
- The system should be perceived as fair, transparent and socially acceptable.

SNED, which is administered every other year, evaluates school performance based on students’ scores in the SIMCE, the national census-based student assessment (65 percent weight) plus other indicators of school performance. The prior existence of SIMCE kept the costs of establishing SNED reasonable. In each of the country’s 13 regions, schools compete within homogenous groups (based on geographic and socio-economic variables) and the best ones—representing up to 25 percent of enrollments—win the award. Schools may win repeatedly. The amount was equivalent to about US $460 per teacher in 1998 (or slightly under one month’s salary) and distributed as follows: 90 percent to be shared within the entire school team in the form of a salary bonuses pro-rated to the workload and the remaining 10 percent to be used as the teachers decide.

Awards are based on an index composed of six variables: SIMCE scores in math and Spanish (37%); value-added in scores (28%); Capacity for initiative (6%); improvement in working conditions (2%); equality of opportunities (22%); and parents/teachers integration (5%). The weighing system was modified following an in-depth evaluation of each round of SNED. Teachers and School Directors express reasonable satisfaction with the SNED system.


(b) The PCCs are but one element of an effective overall teacher policy. A human resource policy will also be critical for the medium and long-run financial sustainability of PCC-based teacher compensation. A study of the fiscal impact of new PCCs is a high priority. It should analyze the implications of different career structures and development opportunities, taking into account the

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44 A “professional career” is one in which routine performance appraisals are based on evidence of the desired competencies at the expected level, and promotions, on demonstration of continuous upgrading. For details, see last chapter.
account the demographic dynamics of the school population discussed earlier, system policies such as class size, and the ongoing redistribution of service provision between state and municipal systems. As a first step, MEC’s Fundescola Project has developed and tested a software allowing state and municipal governments to play with various PCC scenarios. Dissemination of information and experiences and technical support in these areas is another obvious role that MEC is playing and could expand and systematize for the benefit of all.

(c) Finally, given its complexity and implications, the implementation of any PCC policy will be difficult without a major capacity-building effort in resource management and the introduction of a well-designed education and staff management information systems (MIS), connecting databases to facilitate inventory, supply and demand analyses and scenario planning and projections. It will also require greater coordination between state and municipal governments, a challenge in which state secretariats will have to exercise leadership.

SYSTEM SUPPORT TO SCHOOLS
Schools need support as well as control. Whenever the same individuals (i.e., traditional school inspectors) have fulfilled these two functions, the results have been problematic. Brazil is no exception. Recently, however, with increasing school autonomy, the two have been separated. Control is being replaced by accountability systems typically combining self-evaluation to promote reflexivity and external reviews to ensure objectivity. In parallel, there has been increasing recognition that school improvement requires continuous support to provide just-in-time technical assistance and on-site, needs-based training, to stimulate teacher teams, to promote the creation of professional networks, and to conduct, or commission, applied classroom research. One promising example is the state of Ceará’s Pedagogical Support System (see Box 4.4).

**Box 4.4: Ceará’s Pedagogical Support System (Sistema de Acompanhamento Pedagógico, SAP)**

Since 1998, Ceará has worked to transform its traditional regional branches into loci where both state and municipal teachers in the region can meet regularly for continuing development opportunities and peer exchanges. Each regional center (Centros Regionais de Desenvolvimento da Educação or CREDE) has been strengthened with the appointment of a master teachers for literacy and numeracy to lead teachers’ development work. The SAP links the State Secretariat, the Regional Centers, municipal education secretariats, and clusters of schools. It features regular meetings of pedagogical coordinators at all levels of the system, visits to schools to provide pedagogical guidance, and, on the basis of those visits, the planning, delivery and evaluation of on-going professional development, reinforced by a mentoring program for interested teachers. A cutting-edge feature is that the teachers in the network who exhibit most improvement in their practice may, in turn, become mentors and instructors at the regional centers, and then return to their school, a practice shown to have strong impact on teacher learning and performance in other countries (e.g., New York’s District 2).

Ceará’s SAP applies the proven principles that teachers need continuous support, challenge and reinforcement and that professional growth is fastest when teachers can work collegially, in their school and outside, in groups, networks and teams. This is the essence of the new professionalism, in which autonomy and isolation give way to communities of practice who develop a shared vision and provide peer advice and feedback in a non-threatening mode.
INTERNATIONAL TRENDS

Schools Organized for Learning (SOLs)
Lessons from the effective school and school improvement movements, which were born in OECD countries but are gaining ground worldwide, have generated the concept of schools organized for learning. SOLs are characterized by:

- a belief that "all children can learn";
- dynamic school leadership to inspire, project and sell the school’s vision;
- careful attention to the alignment between goals and practices;
- a strong focus on instruction, backed up by teacher collaborative work;
- continuous staff development linked to the school development plan (SDP) and to incentives;
- the continuous use of student assessment to guide teacher practice;
- school-level autonomy in the management of resources to achieve objectives, balanced by accountability for delivering the results established in the SDP; and
- linkages with the broader environment (community and system).

Leading examples of the use of school development plans as a tool for system-wide school quality improvement include Scotland, where a set of 33 simple indicators has been developed for school self evaluation (see Box 4.5), and the state of Victoria in Australia, where the framework includes the school charter, an annual report, and a triennial external review.

Box 4.5: School Development Plans Driving Quality Improvements in Scotland

Information-based School Development Plans. In Scotland schools must present a multiyear, rolling School Development Plan (SDP) that contains clear objectives, an action plan and indicators and targets to measure and compare the school’s progress. To elaborate the plan, schools undergo a self-evaluation, asking: How are we doing? How do we know? What are we going to do now that we know? The school community (Education Authorities, the School Board, principals, teachers, parents, etc.) have access to pertinent information on individual schools and students that is gathered, analyzed and distributed by the Ministry of Education. In addition, to help the school with this process, Her Majesty’s Inspectorate (HMI)—which is independent and reports directly to the Queen—developed 33 key indicators that provide a flexible way for schools to evaluate themselves across a wide range of factors relevant to their effectiveness.

Target Setting. The HMI also requires that schools set targets in key areas of achievement and basic skills in literacy and numeracy for 2001. To assist schools in setting these targets, the inspectorate provides benchmark information and provisional targets based on: (i) how the school’s attainment compares to the national target; and (ii) how it compares to schools with similar characteristics (mainly, the socioeconomic characteristics of its students). The fundamental challenge is for schools to do at least as well as better-performing schools with similar socioeconomic characteristics. Members of the school community discuss this information, and they generally incorporate the provisional targets into their school development plan, unless there are special circumstances that make these targets either unrealistic or not challenging enough.

Resources and Supervision for SDP implementation. To finance the programs and initiatives required to implement their school plans, principals or head teachers are given authority to manage approximately 80 percent of their school’s budget (in consultation with their local school board*). The schools also receive technical support and training from the Education Department during the implementation of their plan. At the end of the plan period, a team from the HMI evaluates each school’s progress. The team produces a report with recommendations, which is discussed with the school community and generally is used to elaborate the next SDP. However, reports that are extremely negative can be used by the HMI to intervene or close a school.

Focus on Quality. Such transparent supervision and accountability has helped democratize schools and generate "school cultures” more conducive to quality improvement. Members of the school community are building better relationships not least because they have to work together as teams to achieve common goals for which they are held accountable. The head of the HMI has indicated that, although the interim results have been very satisfactory, the ultimate purpose of all the changes is to improve education quality and student outcomes. The Scottish authorities are currently making important efforts to make sure that everyone in the education community gets this message.

**TEACHER CERTIFICATION**

Many countries have found that a rigorous certification process, based on teaching standards, is one of the most effective tools available to governments to improve teacher quality.

### Box 4.6: Teacher Certification in Selected Countries

**What is teacher certification?** It is a process whereby an individual is officially declared “fit to teach” in the public school system and in accredited private schools. The concept comes from other professions such as medicine and law. Strictly speaking, certification is a professional judgment on the qualification/competence of an individual teacher, distinct from the concept of licensing (or “right” to teach in a given jurisdiction) and from actual hiring. Teachers are normally given initial certification at the beginning of their careers and in an increasing number of nations the initial certificate must be renewed at regular intervals (say, every 5 years). This ensures that teachers keep abreast of new developments in their fields and new reform trends, etc. In countries such as Australia and the U.S. standards of excellence in teaching, to be pursued on a voluntary basis, have also been introduced by the teaching profession and provide a basis for “advanced certification.”

**Who is responsible for certification?** Certification can be the responsibility of a state agency or a professional board, whereas advanced certification is usually the responsibility of a professional board. In centralized nations, where the State is both the main teacher training (TT) provider and the main employer of teachers, the intake into teacher training institutions (TTIs) is usually tailored to the projected demand for teachers (Cuba, France, Uruguay). The TTI makes a recommendation for certification to the employer, and validation means automatic employment. In countries where much of the supply of teacher training is private, the public needs quality control. In a decentralized and federal country such as the U.S., initial certification is a state responsibility.

**How are teachers certified?** In France, student teachers are continuously assessed against teacher standards labeled “Référentiel de Compétences” through formative evaluation during their 5th year of study (dedicated to an internship or practicum) and summative evaluation at the end. This forms the basis for a recommendation by the management of the teacher training institute (TTI-)(Institut Universitaire de Formation des Maîtres-IUFM) to the employer (Regional “Academies”) who validates or not the qualification. There is no periodic re-certification. In the United Kingdom, the Teacher Training Agency (TTA@GTVNET.GOV.UK) has defined standards for Qualified Teacher Status, Subject Leaders, Special education Coordinators and Head Teachers. To be certified, teachers must meet all the standards, pass all the relevant tests and demonstrate successful school experience. The TTI provides a career entry profile highlighting the graduate’s areas of strength and for improvement (4 each). The trainee completes a probationary year in a school and passes another set of standards. When successfully completed, the teacher is registered by the General Teaching Council as a full member of the profession.

In the U.S., the trend is for certification to be based on a national framework defined by the Interstate New Teacher Assessment and Support Consortium (INTASC). The INTASC standards in turn, seek to form a “seamless web” with, upstream, the teacher education program accreditation standards developed by the National Council for the Accreditation of Teacher Education programs (NCATE) and, downstream, the advanced certification standards developed by the National Board for Professional Teaching Standards (NBPTS). Typically a teaching certification/license is awarded following one or a combination of the following approaches: (i) degree from an accredited teacher education program; (ii) transcript analysis, for students graduating from non-approved institutions or having earned courses from a variety of institutions; (iii) tests administered mid-point through the 4-year degree and after graduation; (iv) alternative certification for a one-year period cum mentoring, additional coursework, and regular seminars; and (v) inter-state reciprocity agreements that allow teachers’ mobility across states. Alternative certification (or temporary licensing of teachers who lack full qualifications) is still an issue in the U.S., however, especially in states with teacher shortages.

**At which levels are teachers certified?** In France, teachers are certified to teach at the primary or secondary level. Once confirmed essentially they progress in the career based on inspection reports and seniority. In the U.S., the state of Connecticut, considered by many as a model in terms of teacher policy, grants certificates at three levels, based on education and experience; (i) Initial educator certificate (3 year validity) and Interim (renewable or not) (Initial/provisional) Educator Certificate (1 year); (ii) Provisional Educator Certificate (8 years); and (iii) Professional Educator Certificate (5 years). To move up from one level to the next, or simply to renew his/her license, the teacher must take a number of courses (http://www.state.ct.us/sde/cert/CERTYPES.HTM).

**Issues and trends.** Countries such as Brazil considering certification as a QA mechanism should seek to address the following questions:

- How to balance the profession’s legitimate oversight with politicians’ and parents expectations for accountability?
- How to build the standards and tests to assess not just cognitive knowledge but also the personal characteristics which make for good teachers?
- How to develop, at a reasonable cost, multiple assessment strategies which capture the many facets of good teaching?
- What does the system expect from an experienced teacher versus a novice; and
- How to put an end to alternative certification.
However, alternative certification, i.e. the waiving of normal procedures, is an issue faced in many systems and which has aroused much debate. When alternative certification is designed to lure accomplished, high-quality professionals into teaching as a second career, it should be encouraged as a way of enriching the profession. However, too often it means lowering recruitment standards — in terms of academic level or professional preparation — in order to meet shortages. All country experiences and recent US research show that this latter form of alternative certification should be discouraged as it leads not only to lower student results but also to higher teacher drop-out. Where there is no choice, intense, continuous professional development, close mentoring and re-certification would be in order.

RECRUITMENT AND DEPLOYMENT

Another strong international trend is the reliance on increasingly higher standards for teacher certification and recruitment. Demanding standards, especially if supported by improvements in incentives and continuous professional development, have been successful in upgrading the image and performance of the teaching profession, for instance in Ireland and in several U.S. states (notably Connecticut and Texas). The UK is currently going the same route. Far from discouraging recruitment, these countries have found they attracted more and stronger candidates.

A policy to staff at-risk areas would need to distinguish between rural and urban hardship. Teachers resist being posted in rural areas due to distance from home and isolation. Promising approaches include the provision of housing (Malaysia), housing credit (Colombia), locally based continuous professional development (Chile), local recruitment and preparation (Uruguay), and scholarship/accelerated career opportunities. In New Zealand, for instance, all teachers “earn” each year a number of points differentiated by hardship level (the harder, the higher). These points are taken into account when competing for reassignment. By contrast, in urban areas typically teachers fear the lack of engagement and youth violence associated with poverty, unemployment, poor housing conditions, family breakdown, substance abuse, etc. Solutions have tended to combine sector-specific measures (fewer students per teacher, more teamwork and pedagogical support, emphasis on school development plan, accelerated career) and measures to strengthen the social fabric by creating local partnerships (see British & French Priority Education Zones, and their Brazilian twin, the Fundescola Project).

POLICY OPTIONS

Emerging from this discussion is the central importance of aligning managerial elements of the teacher strategy with clear national teaching standards reflecting the skills, values and behaviors shown by research to have an impact on children’s learning in Brazil. Specifically, this would entail many of the following actions:

1. Make entry into the profession more stringent
   - Implement INEP’s proposal to establish a certification system at state level but within a national framework (see last Chapter)


46 See for instance the “Quality Counts 2000” Report in the US, a special score card on how each state implements the recommendations of the National Commission for Teaching in America (Education Week).
Whenever possible, promote the *concurso único* approach between states and their municipalities, as the goal should be to gradually lift the qualifications of municipal teachers to par with those of their state counterparts.47

2. Develop a policy to staff at-risk schools
   - Distinguishing between rural and urban hardship posts, review the lessons learned from experience with different incentives (see prior paragraphs) before defining such a policy

3. Restructure the teaching career to encourage continuous learning and performance in the classroom
   - Focus on the probatory induction of young teachers48
   - Link career steps to standards of performance
   - Introduce selective career incentives
   - Improve the professional management of contractual teachers

4. Establish a “built-in” system of teacher performance appraisal and evaluation
   - Design a system for yearly performance appraisal (to guide improvements in practice) and periodic evaluation (for promotion purposes), aligned with the certification system via the teaching standards
   - If team evaluations, Chilean style, are found insufficient, complement them with performance contracts under which individual teachers would be evaluated (i) within the teaching team as part of a school review (see next Chapter); (ii) against their own professional development needs, as agreed with supervisors; and (iii) their students’ outcomes
   - Give serving teachers a choice between a “development path” (more support, challenges and rewards) and an “administrative path” (less demanding, stable compensation) leading to eventual exit (e.g., Ontario North York program “Supervision for growth”) while making the new evaluation system compulsory for entering teachers.

5. Organize schools to support learning for all
   - Use the school development plan as an instrument for growth and accountability (see next chapter)
   - Develop school leadership
   - Create and nurturing a collegial culture

6. Strengthen the enabling environment for effective and efficient teacher management
   - Establish a teacher MIS with a Geographic Information System interface. This system might best be developed at the state level, with a national network49 to promote inter-state equivalency agreements.
   - Disseminate information to educate the public about what educational quality is and what it takes.

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48 See for example APEC Education Forum “From students of Teaching to Teachers of Students: Teacher induction Around the Pacific Rim”, 1997. Countries which have defined teacher standards use these as the basis to draw between the inductee and his/her mentor(s), a "performance contract" specifying what competencies the young teacher will have to demonstrate by the end of the period in order to be confirmed /certified.

49 See for instance NASDTEC, National Association of State Directors of Teacher Education and Certification in the US (www.nasdtec.org).
• Stimulate TTI and school improvement management and monitoring tools (PROVÃO, universal student testing, school review results), to guide parents and students choices, and spread promising innovations
CHAPTER V: TEACHER PROFESSIONAL DEVELOPMENT

INNOVATIONS IN CONTINUOUS TEACHER PROFESSIONAL DEVELOPMENT

In Brazil, the best coexists with the problematic, in teacher continuous professional development (PD) as in other areas. Multiple sources document the fact that teacher PD has often been scarce, top-down, off-site, one-shot, unrelated to a broad strategy and not targeted to the teachers who need it most. As an extreme illustration, a 1997 study on “Teachers’ and Principals’ In-service Training in Bahia” mentions the lack of transparency in the criteria for selecting course participants, lack of clarity or realism in training objectives, and most critically, lack of impact evaluation. Interviews conducted in the context of the study indicated that too often training was “conducted in a hurried manner, focusing on immediate needs, without promoting reflection or real learning, much less attitude change.” Today, the large numbers of serving teachers requiring professional upgrading to comply with LDB provisions has made the design and delivery of effective teacher development a priority throughout Brazil. Confronted with the challenge of having to train large segments of their teaching force, state secretariats of education are exploring and implementing a variety of innovative partnerships with training providers. The two states—Ceará and São Paulo—examined in the CENPEC background study illustrate the extent of good existing practices along the principles outlined in the Referencias.

CEARÁ’S PUBLIC SCHOOL TEACHER ON-GOING TRAINING

This program—a joint endeavor of two state Secretariats (Education and Social Action), the 184 Municipal Secretariats of education, and an NGO, the Fundação Demócrito Rocha—is targeted at grade 1-4 teachers across the state, 70 percent of whom work in municipal and 20 percent in state schools. About half of this group has only secondary level preparation. This 200-hour multimedia course, designed and implemented with the Federal University of Rio de Janeiro, is spread over a 12-month period. It emphasizes a combination of academic disciplines and didactic training, with a focus on preparation and implementation of a school plan. The strategy combines in-site and distance training, backed by abundant, high quality support material, delivered directly to the school, on-site tutoring, a journal, TV programs, an 800 help-line, fax service and Internet access in the municipal support centers. It is to be evaluated in terms of teachers learning, institutional arrangements, and impact on teacher/student interaction and subsequently on pupils’ achievements. This program is in line with research findings that partnerships are a promising modality, and that improving instruction requires first, deepening simultaneously teachers’ content and pedagogical knowledge and second, using the continuous assessment of student outcomes to evaluate and reorient teacher practice.

São Paulo’s “School with a New Face” and “Continued Education Program” (PEC)

The state of São Paulo’s reform program aims at replacing the “culture of failure” by a “culture of success” through a systemic approach involving physical reorganization, introduction of yearly sample-based testing, decentralization to regional centers through parent/teacher associations, and the creation of regional clusters to disseminate new educational technologies and more learning resources to the schools. Remedial education was substantially expanded and a large-scale program of “accelerated classes” was introduced to reduce age-grade distortion. In terms of instructional change, a system of cycles was adopted to reduce repetition, along with teacher teamwork and pedagogical support within schools. Drop out and repetition have declined dramatically, although student achievement scores as yet show little change.

50 Prepared by A-L. Magalhaes and C. de Carvalho in the context of the “Call to Action” study.
To support this process, although the formal qualification level of teachers in the state system is high (42 percent of grade 1-4 teachers and 100 percent of grade 5-11 teachers have higher education degrees), the SEE (State Education Secretariat) launched a massive 2 year program of on-going teacher development (*Programa de Educação Continuada—PEC*). Under the PEC, training needs were defined from the demand side, based on a diagnosis conducted by 19 “poles” working directly with competitively contracted universities and schools. The PEC was evaluated on a formative and summative basis by the participants and externally by the Carlos Chagas Foundation.

**ON-SITE TRAINING OF MATH TEACHERS BY SP PONTIFICAL CATHOLIC UNIVERSITY**

This upgrading program for grade 5-8 and 9-11 math teachers by the PUC-SP Exact Science and Technology Center focused on entire schools (350). It combined a variety of approaches: up-front participatory diagnosis, on-campus activities, in-school training, distance education, and production of materials, actions research. The iteration between different modalities is expected to embed the training in teachers’ daily practice and in research, and to assist them to master the content and didactic of their discipline, as well as explain to the students the connections between mathematics and other disciplines, and to get a broader vision of where their teaching fits in the context of educational policies. This program illustrates the importance of strengthening simultaneously content and didactic, as well as the trend towards whole-school training to create a critical mass of teachers with a shared vision as fertile ground for introducing new, improved teaching techniques. The University used this program to identify weaknesses in teachers’ mastery of mathematics, feeding these lessons back as input into the design of another course.

**Two São Paulo “Whole School” Training Programs**

These two programs in São Paulo, each with about 5,000 participants, were run respectively in partnership with the Regional Centers by Mogi das Cruzes University (MCU, a private institution) and the State University of São Paulo (UNESP—Bauru Campus). Both involved in addition to regional technicians, entire school professional teams (directors, pedagogical coordinator, and grade 1-8 teachers), and both supported State Policies: school autonomy in the case of MCU, with a particular emphasis on the school development project as a tool to ensure consistency between policies and classroom reality; decentralization in the case of UNESP, with a focus on people management and relations with external stakeholders. Both programs combined the various approaches mentioned in the other case studies. However, reactions were often mixed and attendance uneven partly due to inadequate preparatory work on the part of the Regional Centers, and partly because of a classic case of reform anxiety and overload, as found in many other countries. Besides illustrating the challenge of managing cultural change, these two examples show on one hand the extent to which the São Paulo reform has internalized key concepts such as needs-based training and team building; on the other hand they illustrate how much the universities’ training programs can benefit from increased contact with school reality from which they are largely cut off.

**What These Programs Have In Common**

All were selected in coordination with the state education secretariats and reflect their perception of innovative approaches. CENPEC’s analysis found that the programs share a number of common features:

- All are part of a *systemic, broad reform* effort, built on a political consensus on the need to improve student learning in the classroom. The teacher development interventions are an integral element of a vision centered on the inner workings of schools. The underlying policies have been consistently supported over several administrations, making it possible to be bold, to build the necessary ownership and capacity, and ensure a reasonable degree of sustainability. In both cases the overall reform design involved managerial and planning
improvements, better material endowments, pedagogical innovations, and a system of support to schools.

- They take a multifaceted approach to improving student outcomes, recognizing that no single intervention will do and all stakeholders have something to contribute, and they link teacher training to broader sectoral goals. So teacher training design, delivery and funding are the result of vertical and horizontal, political, technical and social partnerships and are linked to other interventions upstream (scholarships and incentives) and downstream (recruitment, school-level interventions). All are seen as a continuum with multiple locations (the school, the regional or municipal offices) and feedback loops.

- They focus on the school as the unit of change, trying to influence its internal processes and its relationship with its environment. In particular, they emphasize the learning process, the two-way articulation between theory and practice. They stress the importance of needs-based, on-site professional development for teachers and directors, to complement centrally driven training, which remains necessary. They strive for consistency between the training experience and the reality of classrooms and address both generic and content specific skills. They recognize that reform happens in the classroom and cannot materialize without teachers' sense of ownership.

- They use teacher networks as a key instrument for exchanging experiences, problems and solutions, creating a shared vision of what works and for disseminating it. To do so, they use a broad range of conventional and innovative arrangements and supports: pedagogical teamwork within the TTIs and within the schools; regionally based centers to support the schools; distance education and use of technology; professional diaries, publications and Internet access.

- They create a process of continuous feedback to teachers from the TTIs—in most cases the university. The case studies demonstrate that the universities can be demand-responsive, work collaboratively with the client, the schools and other stakeholders in defining and refining the expected profile of future graduates and through this process, improve their own initial and continuous teacher education programs.

On the other hand, while the above programs have been evaluated on a formative or summative basis or both, these evaluations have been early and qualitative, and unable to draw on objective measurement of the final impact on student learning. Thus, as consistent as these programs may be with international trends, they reflect a perception of promise rather than objective evidence of effectiveness, and need to be approached with a healthy dose of skepticism. Nor is this small sample of programs reflective of all of the innovations in teacher professional development going on in Brazil. Another promising approach, being adopted increasingly, is teacher training in connection with the introduction of “accelerated classes,” (see Box 5.1).
Box 5.1: Teacher Development for “Accelerated Classes”

Strong efforts are being made in many school systems in Brazil to create a new kind of classroom and stimulate and support more effective teaching. The most promising of these initiatives focus on a radical adaptation of the curriculum designed to meet the needs of overage students. By compressing several years of the fundamental school curriculum into a single year of intensive study, classes de aceleração, as they are variously called, enable students to catch up and complete the fundamental school cycle closer to the appropriate age.

These new programs organize instruction in cycles, use modular learning materials (so students can track their individual progress and learn at their own pace), and feature high quality books and materials adapted to the interests of older students. Materials present the curriculum in engaging ways, such as simulating a market to show the nutrition value of different foods, mapping the origin of students' families, costing improvements in the school, or detecting social concerns in the neighborhood. Some variants of the program use high-quality instructional videos developed by the Fundação Roberto Marinho (Tempo de Avançar/Telecurso 2000). Exercises are designed to be relevant and to generate success so that students begin to feel that they can learn and that school is useful.

All variants of the accelerated programs involve intensive retraining of teachers, up to 250 hours during the year. Importantly, the training focuses as heavily on changing teachers' practice and attitudes as on familiarizing them with the new curriculum content and materials. The programs also often emphasize a strong teacher support system. Trainers continuously model the communication of positive, esteem building messages and positive expectations. Teachers are taught to encourage effort and to celebrate students' success. Teachers are trained in critical skills for the environment in which they work: lesson plan preparation and the acquisition of a repertoire of teaching strategies. There is a strong emphasis on encouraging the students to read one book/week, the art of listening, and giving positive feedback.

Source: Joao Batista de Oliveira, Programa Acelerada, MEC 1999.

In search of mechanisms to improve pedagogical practice in the classroom and strengthen the content knowledge of early grade teachers in the public school system, the Federal Ministry of Education, MEC, has introduced two innovative programs which apply similar principles. One -- the Training Program for “Professores Alfabetizadores” -- works in partnership with local TTIs to strengthen teacher competencies in the area of elementary student literacy. The other -- The Curriculum Standards in Action (PCN em Ação) Program -- assists state and municipal systems to create network of trainers with three main objectives: to disseminate the new PCNs' competency based methodologies, assist in adapting the PCNs to local contexts, and provide technical support in their overall implementation. While both have a recent history and have not yet been formally evaluated, they feature promising design elements and provide another illustration of MEC’s role of technical assistance and quality assurance.

The next section looks at how the best Brazilian programs compare to international trends.

INTERNATIONAL TRENDS IN IN-SERVICE TEACHER TRAINING

THE NEW PARADIGM OF TEACHER PROFESSIONAL DEVELOPMENT

Worldwide, professional development of teachers is increasingly seen as a career-long process, with continuous feedback loops between theory, practice, and research. It works best when:

- It is based on a vision, shared by professionals and politicians, of what a good teacher should know and be able to do; a vision that is agreed at the national level, adapted to local needs and owned by the main protagonists at the school level.
- It recognizes that teachers learn and work best in teams, groups and networks.
- It builds on the experience of senior teachers to mentor less seasoned colleagues in critical phases of their careers, especially the first years, or when they are struggling.
• It shows the potential for innovative forms of collaboration between academia and the school system, as well as a hint of where the difficulties might be. In Brazil many of the programs labeled “initial training” are actually in-service programs for “lay” (untrained) teachers, which provide interesting examples on how to integrate theory and practice, a key challenge in efforts to reform teacher initial education.

• It creates structured activities, “spaces” and incentives to promote teachers’ reflexivity on their practice.

• It reflects recognition of the highly political nature of educational reform and an awareness of, and talent at, mobilizing many forms of partnership.

**Recent Developments in Selected Countries**

For this study, we analyzed recent in-service trends in a dozen countries, mainly OECD and LAC. The analysis showed that until recently, in many of them teacher in-service training was sparse and, in terms of location, offered mainly in TTIs or in government training centers; the teachers were pulled-off from the school. Today, there is recognition that an effective teacher professional development strategy requires articulating three complementary approaches: (i) the traditional top-down, residential, course or seminar offerings to introduce reform-related topics or address widespread teaching weaknesses; (ii) on-site whole team training, based on the perceived needs of the school, and its overall improvement strategy as expressed in its SDP/SDP; and (iii) teachers’ individual growth needs as identified through self, peer and supervisor evaluation. Where schools control their own training budget, experiences shows that offering a menu of formats dramatically increases the demand for training.

The design of today’s teacher Professional Development builds on principles learned from the field of adult learning, such as the effectiveness of a just-in-time response to a pressing question, or the importance of offering flexible and practical delivery options. It is embedded in classroom practice, based on assessment and observation, and grounded in research, reflection and inquiry – as for instance in Cuba (see Box 5.2), which places strong emphasis on applied research.

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53 See T. Corcoran at [www.upenn.edu/gse/cpce](http://www.upenn.edu/gse/cpce).
### Box 5.2: Teacher Professional Development in Cuba

**Life-long training.** Teacher training is a life-long process that takes many forms. Its aim is to help improve classroom practices. Fifteen higher institutes of education of teachers. Pre-service courses consist of five years of training, while in-service courses last six years. Training for school directors is provided at the same time so that they understand the teacher development process.

**School-based.** A strong linkage between academic teacher training characterizes teachers' professional development and schools, a teacher trainer candidate must complete as a pre-requisite 6 to 7 years as a teacher at the level at which he or she intends to prepare teachers.

**Networks of learning teachers.** Strong emphasis is given to teamwork and exchanges of experiences. Each area has a colectivo pedagógico for each discipline (ciencias naturales, ciencias sociales, etc.). These colectivo pedagógico meet periodically to discuss teaching methods, produce learning materials, adapt curricula to local needs, and exchange experiences. They develop a "banks of problems" and plan to address these. Every program has a methodological guidebook for teachers of each grade that provides examples of good lessons and guidance on how to teach different learning units. The colectivo of teachers meet every two weeks to discuss teaching strategies, school, evaluation results, and the general educational "climate" of the school. Institutional support is provided to schools to promote professional development among teachers. A metodólogo works with teachers to support them.

**Action research.** Every teacher is expected to carry out applied research on ways to improve learning achievement and systematize pedagogical experience. During training, teachers are prepared to carry out classroom studies on how to address students' problems. Every two years teachers present their best work on innovative teaching practices to a "municipal education conference" Municipalities select the best research for the province selects the best for a national conference where the best 900 research projects are presented to an audience of national and international participants. Symbolic and material incentives are provided to teachers presenting the best research. Pedagogical research is guided by two institutions, the Instituto Central De Ciencias Pedagógicas (ICCP), and the Instituto Superior Pedagógico (ISP).

**Links to the community.** Teachers interact regularly with community members and parents through other participatory modalities(councils, parents' schools). This allows teachers to learn about local communities, and the conditions facing children and their families, thus creating an environment supportive of education. School-based innovations seem to last because they are supported by several actors (teachers' coletivo, students, parents and community). Teachers are community activists, help plan school life and spend 80 percent if their time with students at school and the rest of their time in student's homes. Students meet to study together, from one to three times a week in "study homes". Teachers visit parents and identify families with potential problems as well as families able to host a group of students.

**Evaluation and accountability.** Continuous evaluation is part of teachers' professional development, providing useful information to improve teaching practice through action research and life-long learning. It takes the form of participatory process that includes all the major stakeholders and the "teacher working group" (colectivo). Evaluations generate recommendations for teachers' self-development plans (plan de superación autodidacta o postgraduada) for the following academic year. The university also participates in the evaluation of teacher performance, and by doing so receives feedback on its activities, enabling it to adapt its offerings to the realities of schools. Teachers' accountability is a reality in Cuba. Career growth depends primarily on positive evaluations of teachers' classroom practice. Teacher salaries are often related to student performance. Teachers whose students fail to perform at the normal risk cuts in pay.

**Professional status.** Cuban teachers are regarded as true professionals. Their social status is high, and there is little difference between teacher's salary scales and those of other professionals.

*Source: Based on Lavinia Gasperini, The Cuban Education System: Lessons and Dilemmas" World Bank (Jan. 2000)*

Sustained and intensive, modern professional development seeks to engage teachers intellectually as well as emotionally, using a wide range of techniques such as modeling, coaching, collective problem-solving around concrete problems of practice. It embraces practically the whole range
of topics studied in teacher preparation: content, pedagogy, planning and management, teamwork, information processing, community relations, student assessment, etc. Today, with the explosion of knowledge and the increasing demand for teacher accountability for results, teacher PD is seen as a lifelong learning professional development obligation. The range of providers has diversified to include not only TTIs, be they normal schools or universities, but also regional training centers and local education authorities, the schools themselves, professional associations and teacher networks, and private providers. While in a few countries (Cuba, France) the government continues to be the main supplier, in others (England, New Zealand) provision is completely decentralized, with schools managing their own training budget and "buying" the services they need, providing incentives for suppliers to become more client-responsive.

The control of programs used to be entirely in the hands of government or of the TTIs, with, however, an exceptionally important role for teacher networks in the case of Japan. Today, a diversity of arrangements can be found, such as a combination of government funding and decentralized provision (U.S., England) or government financing but participatory provision (Cuba, France), or business support (Brazil, US, and Philippines). A number of countries such as Australia, Ireland and the UK have developed many forms of innovative partnerships. Frequently, two parallel systems are found, a formal, government-run system, and an informal one, driven by the teachers and education professional themselves, as in Japan. Rigorous impact evaluations are, however, very rare.

**DISTANCE AND TECHNOLOGY-BASED PROGRAMS**

In 2000, the proportion of Brazilian teachers with higher education was only 19 percent among pre-schools teachers, 25 percent for grade 1-4 teachers, and 74 percent for grades 5-8 teachers. However, even teachers who currently meet the new competency requirements will require continuous support and competency upgrading over their careers.

Where the public to be trained is widely dispersed, the best trainers are not necessarily located in the areas of greatest needs, distances are large, and opportunity costs are high, distance education is an appropriate solution. Communication technologies can connect training resources wherever they are with large numbers of trainee-teachers on an on-going basis. Brazil has been a leader in this field, along with other large or technology-oriented countries such as Australia, Canada, China, Korea, Hong Kong, Singapore South Korea54. The following programs, building on strong pedagogical principles, similar to those underlying the accelerated classes, illustrate the richness of the Brazilian distance-learning experience55: TV Escola, the Federal University of Mato Grosso, Foundation Roberto Marinho and IBM Laboratory in Rio, Proformação, Procap/Procad in Minas Gerais and ProInfo in Rio Grande do Sul and Espirito Santo, are but a few promising examples.

These programs all reflect an upfront investment in good design, are modular in structure, with content specifically focused on the instructional needs of trainees, a strong face-to-face support structure allowing iteration and reinforcement between theory and practice, and built-in assessment with feedback loops. There are many indications that these programs have strong potential. Formal impact evaluations have not been yet been conducted, but are planned at least for Proformação and Procap/Procad. Making this a universal practice would continuously enhance quality through feedback on the final outcome of improved learning in the classroom.

54 See "Teacher Education at a Distance" by Hilary Perraton & Michael Potashnik, World Bank Publication, 1997.

55 See for instance: "Em Aberto", issue on Distance Education, June 1996
POLICY OPTIONS

1. Define teachers’ professional development needs in the context of the School Development Plan (SDP) and linking them with the incentive and support system

- Increase orient the design and use of the SDPs as coherence-building instruments aligning the “vision” of the school onto state/municipal teaching standards (a la Scotland). This could focus efforts and resources, help empower teachers, trigger an internal professional conversation, give more prominence to school/teacher accountability and promote the linkage between continuous school improvement.
- Possibly pilot “Whole-school reviews” by “Quality Assurance” teams (a la Australia), in lieu of the present inspection/pedagogical coordination arrangement
- Feedback is given by the QA teams to schools in order to guide teacher practice improvement, and to TTIs to inform the revision of training programs.
- Emphasis on support but consequences for persistently underachieving schools.

2. Link together Teacher Evaluation, incentives and support and placing them in the context of the SDP (see previous chapter)

3. Promote Teacher Professional Networks (these networks can take a variety of forms)

- Mandated, paid pedagogical teamwork within schools: by discipline, by grade level, by project
- “Microcentros”—regular meetings among schools of a same nucleus (rural multi-grade schools)
- Between Teacher Support Centers and schools
- Through Professional Associations (Math teachers, Unions)
- Internet-based community of learners

4. Develop a program of impact evaluations and tracer studies for selected teacher continuous professional development programs

- Start at the federal level, but gradually develop state level policy and capacity
- Initiate a process of dissemination and collective learning (MEC-state network) about what works and what does not work

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56 This is suggested because traditional inspectors remain control-oriented while exclusive reliance on the support side (e.g., pedagogic advisors) may lead to insufficient demandingness and sub-optimal results. The proposed QA teams, balancing a support and a control perspective, could conduct comprehensive, participatory school reviews (from classroom observations and financial audits to meetings with parents), assist the schools with preparation of an improvement plan and monitor its implementation, providing support as needed. They could assess the gap between the school vision and its reality, by comparing the results of student assessments, reports to schools, and parental surveys, with the standards. The findings could, in turn, be used to define teachers’ professional development needs.
CHAPTER VI: TEACHER COMPENSATION AND INCENTIVES

This chapter examines whether the level and structure of teachers’ salaries and the other incentives they receive are adequate to achieve the government’s vision of quality teachers for all classrooms, and if not, what else is required. It analyzes the overall fiscal impact of the LDB-mandated increase in the minimum education requirements for teachers. Finally, it looks at a menu of options for attracting and motivating higher quality teachers in a fiscally sustainable framework.

OVERALL PACKAGE

TEACHER SALARIES

A comparison of the monthly take-home pay of public teachers and private sector employees—with the same set of characteristics—reveals that teachers have on average higher monthly earnings (3 percent) (see Table 6.1). The relative attractiveness of teacher compensation increases dramatically when adjustments are made for the fact that teachers work significantly fewer hours per week than workers in other sectors—30 hours per week, on average, compared with 44 hours per week in the private sector. When teachers’ wages are computed on an hourly basis, their compensation is 47 percent higher than that of other comparable professionals. This is consistent with the pattern throughout Latin America. A recent comparison of teacher compensation in 12 countries found that, adjusted for hours worked, in 10 out of 12 countries teachers earn as much or more than workers in other professions with comparable educational backgrounds. In addition to relatively high salaries for the hours worked, for most teachers relatively long blocks of vacation time and a short working day are intrinsically attractive aspects of the overall compensation package.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Labor Income From Principal Job</th>
<th>Labor Income From All Jobs</th>
<th>Hourly Income From Principal Job</th>
<th>Hours Worked Per Week, Principal Job</th>
<th>Average Tenure in Current Job (in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers—Public Sector</td>
<td>514</td>
<td>589</td>
<td>4.52</td>
<td>30</td>
<td>9.9</td>
</tr>
<tr>
<td>• State</td>
<td>580</td>
<td>662</td>
<td>4.90</td>
<td>31</td>
<td>11.5</td>
</tr>
<tr>
<td>• Municipal</td>
<td>432</td>
<td>498</td>
<td>3.90</td>
<td>29</td>
<td>8.2</td>
</tr>
<tr>
<td>Teachers—Private Sector</td>
<td>502</td>
<td>581</td>
<td>4.68</td>
<td>29</td>
<td>6.2</td>
</tr>
<tr>
<td>All government Employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• State</td>
<td>818</td>
<td>886</td>
<td>5.10</td>
<td>37</td>
<td>10.9</td>
</tr>
<tr>
<td>• Municipal</td>
<td>455</td>
<td>506</td>
<td>3.01</td>
<td>37</td>
<td>7.3</td>
</tr>
<tr>
<td>• Executive branch</td>
<td>1502</td>
<td>1536</td>
<td>9.40</td>
<td>39</td>
<td>12.8</td>
</tr>
<tr>
<td>• Legislative branch</td>
<td>1526</td>
<td>1598</td>
<td>11.80</td>
<td>36</td>
<td>8.4</td>
</tr>
<tr>
<td>• Judicial branch</td>
<td>2023.4</td>
<td>2060.7</td>
<td>13.9</td>
<td>38</td>
<td>7.4</td>
</tr>
<tr>
<td>All Private Sector Employees (com carteira)</td>
<td>581</td>
<td>594</td>
<td>3.43</td>
<td>45</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Source: Pesquisa Nacional por Amostra de Domicílios (PNAD) of 1999

Note: A comprehensive version of Table 6.1 is in the annex.

57 The typical teacher is defined as being a women, white, 30 years old, 11 years of schooling, residing in the Southeast Region in a large municipality.
Teachers’ relatively short working day also makes it possible for them to hold a second job. About 17 percent of teachers in Brazil report a second job, which boosts their average monthly income to from R$514 to R$589, close to that of comparable private sector workers with two sources of income (R$594). In sum, there is little evidence that, on average, Brazilian teachers are under-paid for their current level of qualifications.

Beyond salaries, teachers receive some important non-financial benefits. If they work in the public sector (as 85 percent of Brazilian teachers do), they enjoy life-long employment with little probability of dismissals. And, as discussed later in this chapter, public sector teachers also have exceptionally attractive pension benefits including eligibility for retirement after 25 years of service, as early as age 48. In these respects, the picture for private sector teachers is significantly less attractive; average job tenure is much shorter, retirement age higher, and pension benefits more limited or nonexistent.

Recent 1999 PNAD data clearly show that teachers’ compensation varies sharply depending on which system they work in, with teachers in state schools earning most per hour (R$4.90), teachers in private-run schools a close second (R$4.44), and municipal school teachers on average well below (R$3.90). Salary data for the Northeast region presented in the Annexes show an even greater gap there, with municipal teachers’ hourly wages only 60 percent of what their counterparts in state schools earn and 74 percent of what private school teachers earn. Despite the greater variance in teacher salaries across different education systems in the Northeast, even in the Northeast teachers are still better paid—per hour worked—than comparable private sector workers.

Using 1999 PNAD data, a comparison of public and private teachers with the same profile yields the following main conclusions:

- Teachers’ compensation in state-run schools is significantly higher than in municipal schools.
- The monthly earnings of state teachers are comparable to both (a) private sector employees ("com carteira assinada") and (b) the other public sector employees, but (c) are higher than those of private school teachers. When the comparison is based on hourly wages, the state teachers earn more than all other groups included in the comparison (private, state, municipal and federal), with the exception of workers in the federal legislative and judiciary branches of government.
- Monthly earnings of municipal teachers are comparable to those of other municipal government workers, but are lower than those of private employees and of private school teachers. When adjusted for hours worked, however, municipal teachers’ wages become higher than those received by comparable private sector employees, although lower than those of private sector teachers.

Across Brazil as a whole, 1999 PNAD data reveals that teachers’ average monthly salaries are close to the market wages for comparably educated workers in the private sector. Due to the large differences in hours worked per week, hourly wage comparisons almost always benefit teachers and provide even more evidence of the attractiveness of the teaching profession.

The current market competitiveness of government teachers’ pay is the result of the substantial improvements in their benefits, driven by FUNDEF, over the past 5 years. From 1995 to 1999, teachers’ earnings grew 22 percent above those of private sector workers — thus reaching parity with those of private sector workers. This notwithstanding, the analysis found that in many rural municipal systems, teachers’ salaries remain non-competitive with opportunities in the private sector.
If teachers' hourly wages are compared with the overall distribution of hourly wages in Brazil, they are among the top 25 percent of all workers (see Graph 6.1). This in part is a reflection of the large income inequalities in Brazil – to be among the 25 percent better paid does not necessarily mean to be well paid. However, these data do not support the popular perception—or teachers' own perception—that theirs is a relatively low-income profession. One explanation is that teachers may tend to compare their incomes to those of other workers unadjusted for hours worked. A second explanation emerges from comparing teachers' hourly wages with those of other public sector workers. Indeed, on that basis, teachers do fall below the top-paid 25 percent of government workers, although they are still above the poorest 35 percent.

**Graph 6.1**

![Graph showing percentile of public teachers in each one hundredth of the distribution of workers (public and private) according to their hourly income.](image)

*Source: IPEA, 2000.*

**"Flat" Structure of Incentives**

Salary incentives depend not only on the relative level of salaries in relation to other comparable occupations, but also on the salary gradient and the potential for progress over a career path. Earnings functions analysis of 1999 PNAD data reveal that the career structure of government *ensino fundamental* teachers offers significantly less incentive to professional growth on the job over the life cycle than do comparable occupations both in the public and private sector.

Teacher's earnings increase very slowly with schooling. As a consequence, teachers with low qualifications (completed basic education) earn 12 percent above market; while their more qualified colleagues, who have completed higher education, are paid 21 percent below market. This finding is very worrisome because, typically, in the private (or government) sector, the earnings of college graduates are 80 to 90 percent above those of workers with only secondary education, while among teachers the differential is only 50 percent. Surprisingly, low pay differentials for higher education can also be observed among teachers working for private schools (60 percent). These pay structures make it difficult to attract and retain qualified teachers into the profession.

Government teachers' salary growth path is also flatter than that of comparable private school teachers. Average salaries are expected to grow 3 percent per year in the government sector, compared with 4 percent in private schools. Private schools also offer better rewards for higher levels of education than the public sector: 13 percent versus 7 percent per additional year of schooling.
When compared with overall private sector workers, teachers' salary growth is significantly lower (3 percent versus 9 percent), although the rewards to additional schooling are comparable (7 percent). But the salary growth of other public sector employees is three to four times that observed among teachers (10-14 percent versus 3 percent). Within the public sector, teachers are also at a disadvantage in relation to the rewards for higher levels of education: to wit, the 7 percent salary increment for an additional year of schooling among teachers with 11 percent among judiciary employees, 13 percent among legislative employees, and 12 percent among employees in the direct administration.

The implications of such a pay system are that, despite important differences among teachers working for state and municipal systems, in both cases the earnings of young teachers are above the market and the earnings of comparable public sector employees. However these differentials decrease significantly with age. For instance, the earnings of a 25-year-old teacher are 8 percent above those of a private employee and 21 percent above teachers in the private sector. However, by the time he/she reaches 40 years of age, his/her earnings are below those of private employees and just 8 percent above those of private school teachers.

The low reward to tenure of public sector teachers has two effects. On the positive side, paying above-market entry wages to incoming teachers facilitates the recruitment of young people of higher quality. On the negative side, the low compensation later in life robs the more experienced and best teachers of the pride and motivation of their jobs, although they stay in their public sector jobs because of acquired pension benefits.

In sum, while labor market data indicate that on average teachers are paid market wages, over their professional life cycle teachers lack meaningful incentives to performance. Their wage structure is flat and advancement is undifferentiated. The denial to teachers of the steeper wage profiles observed in alternative professions may help explain the lack of motivation among older teachers and the high propensity to early retirement. However, even after FUNDEF, there remain two groups whose wages are often below market: rural municipal teachers and higher qualified teachers.

**PAY AND INCENTIVES UNLINKED TO PERFORMANCE**

In Brazil, pay increases and promotions are almost exclusively based on seniority and evidence of education and training certificates. Few if any school systems have mechanisms to relate teachers' pay to performance in the classroom or at the school level, or to evaluate the impact on teacher performance of any additional education or training acquired.

Many other countries have found it difficult to introduce performance-linked pay ("merit pay") in public sector settings. When applied to teachers, the results have generally not been positive for several reasons. First, the existence of differentiated salary rewards can generate opportunistic behaviors and a competitive rather than cooperative school climate. This flies in the face of growing research evidence that building collaborative "professional learning communities" among teachers in a school is key to teacher professional growth and self-confidence and ultimately, to student progress.

Second, as explained in Chapter IV, merit pay for individual teachers requires measuring teacher effectiveness, typically through student assessment scores. Unions and professional educators resist this approach, arguing that it is invalid because of the complex and non-linear relationship between educational inputs and outcomes and because if applied in a mechanistic way, it could penalize teachers whose students come from disadvantaged backgrounds. Furthermore, this approach can generate perverse effects such as student selection and teachers encouraging weak
students not to participate in “high stakes” learning assessments, or even worse, teachers helping students during the tests.

The need to complement test scores with information on other determinants of outcomes, such as teacher competencies known to have an impact in the classroom, is recognized everywhere. But relying too much on evaluations of the teacher by the director or a single school inspector entails a risk of subjectivity and unfairness. Even more frequently, however, the tendency is to spread positive evaluations and rewards across so many teachers that they become too small to have a behavioral impact.

Nonetheless, promising new approaches that link pay and performance while avoiding the above pitfalls are being developed, for instance in a number of US states (South Carolina and Kentucky among others). But the school-based merit award system developed in Chile described in Chapter IV (see Box 4.2), which rewards entire school teams for student learning improvement and other indicators of school progress, is probably one of the best-conceived and best-implemented of these programs to date.

The implementation of the LDB-enhanced teaching standards requires the government to restructure the PCCs to provide adequate compensation and incentives to attract more qualified and motivated teachers to the profession. While labor market analyses show that overall the current teaching force is paid competitive and even attractive salaries given its level of skills, the average pay for teachers with higher education remains below market. Attracting individuals with the right profile is likely to require more than the salaries currently observed. However, it is crucially important that increases be allocated strategically—i.e., in a manner that effectively draws in higher quality teachers and motivates better performance—rather than through across-the-board salary raises.

The regression analyses presented in Chapter II of the impact of teachers’ salaries and education on students’ SAEB performance and the age-grade distortion revealed little or no positive impact from increases in salaries, but some positive correlation with teachers’ level of education. Given the size of these effects, a one-year increase in teachers’ average level of education could produce a decrease in the age-grade gap of 15 percent of one year of schooling. Alternatively, it would be necessary to increase teachers’ monthly salaries by R$250 (the equivalent of doubling the salary for many municipal teachers) to produce the same improvement in student flows. Simultaneous increases in both monthly salaries and teachers’ education would be unlikely to close even 50 percent of the observed age-series gap observed. The inescapable conclusion is that increases in teachers’ salaries or educational level alone—without any other intervention to improve system management and teachers’ effectiveness—would be a very inefficient and in effect an unaffordable way of trying to enhance student performance.

Reforms supporting merit pay frequently require the renegotiation of teacher compensation contracts. As previously mentioned, the introduction of renewable certification processes (say, every five years) and performance contracts based on School PDS are often a key feature of progressive career plans. However, all known reforms have entailed success in bargaining the “acquired rights” of teachers hitherto tenured for life and whose compensation automatically increased with age, schooling and evidence of training, in exchange for performance based pay. While traveling this road will never be simple, the experience of the state of Connecticut (USA) may provide some guidance. First, a critical pre-condition is the existence of a social consensus about the need for reform, a function SAEB is performing extremely well. Second, the need for differentiated pay scales (according to performance) should be balanced with the need to ensure that teacher salaries are competitive at the market level (taking into account monetary and non-monetary benefits). Finally, the vision of what is expected from teachers, the “social contract”,
should be pitched at a realistic level. The list of competencies expected from a good teacher (content and pedagogical knowledge, leadership, social collaborative skills, capacity to reflect, etc.) is both demanding and ever-expanding, making it impossible, in practice, to find 1.3 million or so suitable individuals. It is unlikely that the government can afford to set a pay scale high enough to ensure that all teachers meet existing norms.

The overall conclusion is that:

- better average salaries are necessary to attract a more qualified and motivated candidates to the teaching profession
- however, for this to be sustainable, and in a spirit of fairness, increases should be selective and reward good performance.
- they should also be complemented by other measures, notably a quality assurance system to demand more from teachers in exchange for greater financial rewards.

SUSTAINABILITY

The LDB’s requirement that by 2007 all new incoming teachers must have college-level qualifications has significant fiscal implications. As signaled previously, it also carries a risk that serving teachers will attempt to obtain the required qualification in one of the many existing low quality TTIs, with little real improvement in their classroom performance. Another risk is that mass upgrading of “paper” qualifications will lead to a reclassification of teachers within the existing career structure and corresponding pay increases for all. As argued above, part of the solution is to establish quality assurance mechanisms, which would provide incentives to teachers for continuous professional growth while guaranteeing that they in fact achieve an enhanced competency level.

A major concern is whether the cost implications of fully implementing the LDB requirements would be financially sustainable. For a preliminary assessment, we used PNAD 1998 data to simulate the impact on average monthly earnings of increasing the level of education of all ensino fundamental teachers to a minimum of 15 years. This was done by dividing the teachers into 6 categories and imputing the salary increases associated with the increased years of education, taking as reference, within each of the groups, the earnings of teachers who have at least the required level of education.
Table 6.1: Estimates of the Impact on Ensino Fundamental Teachers’ Monthly Earnings of Having Acquired a Minimum of 15 Years (College Degree) of Schooling—1998

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Observed</th>
<th>Simulated(*)</th>
<th>Simulated Number (2) of 1998 Teachers</th>
<th>Percentage Change in Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Earnings (1)</td>
<td>Wage Bill (millions) (1)</td>
<td>Average Earnings (1)</td>
<td>Wage Bill (millions) (1)</td>
</tr>
<tr>
<td>Brazil</td>
<td>456</td>
<td>6,172</td>
<td>557</td>
<td>7,541</td>
</tr>
<tr>
<td>Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan</td>
<td>694</td>
<td>1,676</td>
<td>814</td>
<td>1,965</td>
</tr>
<tr>
<td>Rural</td>
<td>280</td>
<td>632</td>
<td>426</td>
<td>959</td>
</tr>
<tr>
<td>Urban</td>
<td>436</td>
<td>3,864</td>
<td>521</td>
<td>4,617</td>
</tr>
<tr>
<td>Public Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>532</td>
<td>3,585</td>
<td>605</td>
<td>4,076</td>
</tr>
<tr>
<td>Municipal</td>
<td>381</td>
<td>2,587</td>
<td>510</td>
<td>3,465</td>
</tr>
<tr>
<td>Area vs. Public Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan x State</td>
<td>665</td>
<td>917</td>
<td>772</td>
<td>1,064</td>
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<tr>
<td>Metropolitan x Municipal</td>
<td>733</td>
<td>760</td>
<td>869</td>
<td>901</td>
</tr>
<tr>
<td>Rural x State</td>
<td>493</td>
<td>185</td>
<td>492</td>
<td>184</td>
</tr>
<tr>
<td>Rural x Municipal</td>
<td>238</td>
<td>447</td>
<td>412</td>
<td>775</td>
</tr>
<tr>
<td>Urban x State</td>
<td>498</td>
<td>2,484</td>
<td>567</td>
<td>2,828</td>
</tr>
<tr>
<td>Urban x Municipal</td>
<td>356</td>
<td>1,380</td>
<td>461</td>
<td>1,789</td>
</tr>
</tbody>
</table>

Source: Pesquisa Nacional por Amostra de Domicílios (PNAD) 1998.

Note: The universe analyzed was (ensino fundamental) teachers who work in the public municipal or state sectors.

(*) The simulation consisted of increasing the schooling of all teachers up to the point in which all had a minimum of 15 years.

(1) Average monthly earnings in the main job in R$.

(2) Estimated Number of teachers: workers who self-classified in the PNAD sample as a government elementary school teacher in the main occupation.

The simulation showed that average monthly earnings of public sector teachers in ensino fundamental would increase by 22 percent (from R$456 to R$557). Average salaries increased by an estimated 52 percent for rural teachers and 43 percent for teachers working in municipal systems. The largest impact was found among teachers working in rural municipalities, whose average salary would rise by a minimum of 73 percent.

This simulation overstates the likely effects somewhat because it is based on the current cohort of teachers and does not take into account ongoing demographic changes and the likelihood that by the year 2007 the cohort of ensino fundamental teachers will be smaller. Moreover, it does not take into account the likely dynamic effects of these changes —i.e., the fact that if unable to afford the new pay scale, the municipalities would be required to make adjustments in average class size (teacher to student ratios) or in the overall pay structure, in order to accommodate the increased salary burden. The simulation does show very clearly, however, that the LDB requirements will create strong fiscal pressures, particularly for municipal systems in rural areas.

The above simulations provide a sobering insight into the financial sustainability of basic education in Brazil. First, the financial implications of upgrading all teachers at a minimum to college level qualification standards could easily prove beyond the current fiscal capacity of most of the poorer states and municipalities. Second, the data raise questions as to the sustainability of the recent across-the-board pay increases, which many municipalities conceded to teachers in
ensino fundamental. Third, they demonstrate the urgency of conducting a full analysis of forthcoming changes in teacher requirements, taking into account three major factors: the likely reduction in teacher demand brought about by the ongoing demographic transition in Brazil; the consequences of the recently observed and projected improvements in internal efficiency; and the requirements of existing pension regulations. In many states a significant proportion of available resources is already committed for payment of the active employees wages and of pensions for retirees. Little fiscal space remains to accommodate an expenditure increase of the magnitude suggested by the simulation.

TEACHER PENSIONS
The conditions of retirement for teachers, be it their age of retirement or pension benefits, are significantly better than for other professions. Teachers can retire with full benefits after 25 years of service for females; and 30 years for males. For private sector workers, the corresponding numbers are 30 years of service for females and 35 for males. Moreover, until the constitutional amendment of November 1998, there was no minimum retirement age for teachers and there was a provision for retirement with partial (70 percent) benefits after only 20 years of service. The impact of these generous pension provisions on the age structure of teaching force are clear from Table 6.2. The percentage of teachers over age 40 in Brazil is strikingly lower than in Argentina and Chile.

<table>
<thead>
<tr>
<th>Country</th>
<th>Teachers Age 40 and Older (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>40.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>28.6</td>
</tr>
<tr>
<td>Chile</td>
<td>59.0</td>
</tr>
</tbody>
</table>

*Source: OECD Education Database*

This has three implications. First, there are few incentives (and in fact a strong disincentive) for experienced teachers to remain in the profession in Brazil. This deprives the education system of potential mentors for novice and struggling teachers, a practice that is recognized as valuable and explicitly encouraged in many countries. Second, given that pensions are financed as a current budget obligation in Brazil, active and inactive teachers are paid from the same revenue source and the increasing ratio of retirees to active teachers is gradually exhausting basic education budget allocations. Finally, from the perspective of morale and incentives, the current pension rules constrain the ability of governments to offer differential and selective incentives to active teachers, because retiree pension benefits are wage-linked to the posts they occupied while active, making increases in the salary scale for active teachers fiscally unsustainable.

Even taking into account FUNDEF resources, a crisis in education financing is clearly looming in the medium term future. The mandated upgrading of teachers' qualifications to the higher education level, the continuous increase in the number of retirees, the linking of pay scales between active teachers and retirees, and the projected decrease in the number of students in ensino fundamental all suggest greater budget shortfalls in the future—which will hit the poorer municipalities especially hard.

On the positive side, the demand for ensino fundamental teachers is decreasing and will only start growing again in the long-run (once possible efficiency gains are exhausted) and then at a lower rate of growth. The market supply of qualified teachers is also improving over time, which will make localized shortages rarer. However, the overall scenario inspires concern. By eliminating the possibility of early retirement with partial benefits and instituting a minimum retirement age for teachers (age 48 for female teachers and 53 for males), the 1998 reforms bought a short period...
of financial solvency through the induced delay in the retirement of existing staff. But unless further reforms are adopted to bring retirement benefits for teachers more closely into line with those available to workers in other sectors, within 4-5 years the number of teacher retirees will start to grow again.

This context makes it difficult to design meaningful education reforms which involve better pay and rewards for teachers. The simulation presented here is clearly preliminary and a complete expenditure review of the education sector is urgently needed. It would clearly be desirable, on fiscal as well as pedagogical grounds, to develop special bonus-type incentives for high-performing teachers to postpone retirement and continue to work as “master” teachers for an additional period. Other policy options that need to be considered are bringing the retirement age for teachers in line with that for other professions and de-linking the incentives for active teachers from pensions of retirees.

POLICY OPTIONS

1. **INCREASE SELECTIVE SALARY INCENTIVES TO ATTRACT AND RETAIN MORE CAPABLE INDIVIDUALS**
   - When revising the FUNDEF (2007), consider limiting salary increases to those states and municipalities which have adopted key quality assurance measures—accreditation of teacher training institutes, teacher certification, performance contracts
   - Develop a policy to staff hardship areas: local recruitment, housing loans, bonuses, accelerated career, additional support
   - Increase salary gradient selectively for high performing staff

2. **IMPROVE MOTIVATION OF SERVING TEACHERS USING NON-MONETARY INCENTIVES**
   - Professional recognition (prizes such as best teacher list)
   - Professional development (study tours and grants)
   - Support from the system, the community
   - Educational resources and equipment, physical conditions of schools
   - Participation in decision-making, grants to school-based innovations
   - Collegial climate
   - Quality of the school and its students

3. **RESTRUCTURE THE PENSION SYSTEM**
   - Delink pension payments from salary increases for active teachers
   - Review length of career
   - Offer special bonus-style incentives for the best teachers near retirement age to stay in the career, helping address the needs for additional teachers and creating a pool of mentors and master teachers

4. **PROVIDE INCENTIVES FOR SCHOOLS AND TEACHERS**
   - School-based merit pay
   - Emphasis on selection and training of directors
   - Consider making school review results public
   - Prizes for best managed schools (UNESCO/UNDIME)

5. **PROVIDE INCENTIVES FOR TEACHER TRAINING INSTITUTES**
   - “Backwash” effect of teacher certification (=graduates who do not meet certification standards will not be hired in public school system)
- Make teaching degree from accredited TTI a condition of certification and employment in the public sector
- Performance contracts between employers and TTIs and discretionary funding
- Competitive Fund to support reform of initial teacher education and establishment of ISEs.
CHAPTER VII: THE WAY AHEAD

Brazil has made impressive progress in improving the equity, efficiency and quality-enhancing conditions of its public education over the past five years. It is recognized that the core outstanding challenge is to improve learning further, reduce student repetition and eliminate dropout, particularly among lower-income students and in poorer regions of the country. Government’s own diagnosis is that the skills, culture and motivation of teachers are key issues underlying persistent problems of age-grade distortion and low student learning.

This report has examined the evidence on teacher performance and strongly corroborates MEC’s diagnosis. The current efforts to reform the policy framework for assuring teacher quality and the incentive framework for ensuring teacher motivation are highly appropriate. But, as with other aspects of education policy, progress on the teacher front will require actions by all three levels of government, in a coordinated fashion. While the Ministry of Education is working to establish such a framework, and a few states have started to put in place mechanisms for implementing change, much remains to be done.

POLICY FRAMEWORK

The report shows that, while there are many paths towards the goal of quality teaching for all children, any overall strategy would have to combine elements from four key policy areas:

- A teacher quality assurance framework to build coherence between policy decisions and classroom practice, enhance accountability and reduce dispersion in student outcomes;
- A new paradigm of continuous professional development, under which teacher growth is a lifelong process, oriented towards concrete student results, linked to whole-school improvement, contextualized, and informed by regular empirical evaluations;
- Better salary incentives to reward what makes a difference in the classroom, making schools and TTIs more responsive to the central goal; and
- An enabling environment for more effective and efficient teacher management at the school and system levels.
Box 7.1: Teacher Strategy

**Quality Assurance/Regulation**
- Initial Teacher Education (ITE) Program
- Accreditation (initial & periodic)
- PROVÃO
- Graduation exams

**Teacher Development**
- Initial Teacher Education (ITE)
- Induction

**Teacher Management**
- School Level: Supervision of interns, School leadership, Teamwork, Deployment to hardship areas
- System Level: Support system, QA school reviews, MIS/GIS & Registro

**Teacher Incentives**
- Incentives to TTI for ITE reform (Competitive Funding)
- Local recruitment and teacher preparation for rural areas

**Entry Into the Profession**
- Concurso
- Probatory internship
- Initial teacher certification

**Progression In Career**
- Teacher routine performance appraisal & evaluation for promotion
- Periodic teacher re-certification

**Key Messages**

Four main messages emerge from this study:

- Only a systemic approach can achieve change of the breadth and depth sought by Brazil in the area of teacher policy. Many countries have found that “fixing” only teacher training or incentives is not enough. Interventions must be aligned. There is a need to develop a full strategy linking these elements, although the modalities, sequencing and pace of implementation will vary with the particular circumstances and absorptive capacity of each system.

- The key is to create “horizontal” synergy between teacher quality assurance, professional development, and management and incentives, with the goal of “learning for understanding and meaning, for all children”: promoting what works, discouraging or re-thinking what does not.

- In a decentralized education system such as Brazil’s, ensuring that policy decisions made at the center (federal or state) are operationalized at the classroom level also requires a set of “vertical” coherence-building and accountability mechanisms. Some are of a structural
nature—standards, assessment and evaluation, performance contracts—others of a cultural
nature—school support systems and professional networks. Some provide support, others
exercise pressure, but both point to the same direction and are in continuous interplay.

- Clearing the fiscal space to finance the teacher reform on a sustainable basis is a priority. This
would require implementing as expeditiously and politically feasible the incentive, career and
pension reforms discussed in the report.

The next sections discuss concrete ways to achieve this alignment and synergy, a possible
redistribution of roles and responsibilities across levels of government, a follow-up research
agenda emerging from the study, and next steps.

ACHIEVING ALIGNMENT AND SYNERGY

The strategy suggested to align all the building blocks of the teacher policy and create synergy
between them would rely on a continuum of standards, articulated with quality assurance and
other coherence building instruments such as evaluations and performance contracts, operating
with cumulative effect like cogs in a clock. It would combine elements of pressure and support,
some having to do with structure and regulation, others with culture, participation and ownership.

Teacher standards —shared norms of what a good teacher in Brazil should know and be able to do,
at different phases of his/her career — would be both the centerpiece and the element bonding the
micro and the macro level and ensuring consistency between the three phases of the teacher
career. Box 7.2 below summarizes these relationships.

<table>
<thead>
<tr>
<th>Box 7.2: Achieving Alignment &amp; Synergy</th>
</tr>
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<tbody>
<tr>
<td><strong>Upfront</strong></td>
</tr>
<tr>
<td>- A clear vision of the type of teacher and teaching required to teach the national curriculum for children (PCNs &amp; PCEs). The vision should feature few, clear, shared goals which in turn will orient the whole teacher QA framework. One relevant question for Brazil as for all countries is how rigorous is the alignment between the curriculum and the ideal teacher in terms of content mastery, pedagogical and other competencies, balance and range of these, and level of performance.</td>
</tr>
<tr>
<td>- Operational standards of teaching practice and performance, based on these goals, understandable by all, sufficiently specific to guide teachers, and measurable (or at least observable) to monitor progress.</td>
</tr>
<tr>
<td><strong>Teacher Education</strong></td>
</tr>
<tr>
<td>- Based on the teaching standards, a system of accreditation for teacher education programs. Making accreditation renewable, say every 5 years, as provided by the new SESu procedures, and introducing graduate performance standards to complement the PROVÃO, as recommended, could help ensure continuous improvement of the Teacher Training programs.</td>
</tr>
<tr>
<td>- Continuous professional development designed to close the gap between observed teaching deficiencies (as described, for instance, in the SAEB reports) and the model embodied in the standards.</td>
</tr>
<tr>
<td><strong>Entry into the Teaching Profession</strong></td>
</tr>
<tr>
<td>- A probatory internship and an induction process (provided for under the LDB) to help beginning teachers weather the “survival phase “with the help of a mentor/tutor. This could be based on a performance contract reflecting the teacher standards.</td>
</tr>
<tr>
<td>- Mentoring by expert teachers to help inductees as well as struggling teachers (LDB)</td>
</tr>
<tr>
<td>- A system of initial and periodic teacher certification to ensure that all teachers are reasonably competent and regularly update their skills. Certification is a technical judgment on an individual’s “fitness to teach”.</td>
</tr>
<tr>
<td>- Optional but appropriate in a decentralized system, a teacher licensing procedure (Concurso) which is an administrative judgment on an individual’s ability to teach in a given administrative unit. The licensing criteria may vary (=be more, or less, demanding) from the certification criteria depending on the local labor market. If this 2-step approach is adopted, certified status, including a degree from an accredited TTI and a satisfactory internship, should be an eligibility condition for taking the Concurso.</td>
</tr>
</tbody>
</table>
Progression in Teaching Career

- A fair and credible system to appraise and evaluate teacher performance. Appraisal is a routine practice, say at yearly intervals, for continuous improvement of teacher practice, while evaluation is for promotion purposes and therefore involves higher stakes.
- A career and incentive structure that attracts and retains individuals with “the right profile” and keeps them motivated to demonstrate the desired competencies (skills, behaviors, values). “Right profile” in the case of Brazil is described in the “Referenciais” and the “Proposta de Diretrizes” as more educated, more professional, more entrepreneurial and responsible. The question of the most appropriate salary gradient depends on the labor market and strategy. The options are: high entry salary with flatter curve and high turnover to attract young dynamic teachers, possibly stronger in new technologies; vs lower entry salaries but steeper curve to keep experienced teachers in the classroom.
- A compensation and promotion system which encourages the desired teacher behaviors in the classroom and rewards results in terms of value-added in student outcomes, especially learning.

ROLES AND RESPONSIBILITIES AT THE FEDERAL LEVEL

QUALITY ASSURANCE
Establishment of the National Curriculum Framework (PCN) in 1998 was a critical first step towards improved teacher quality. In most countries the curriculum framework becomes the basis for defining national standards for teachers, which set out in detail the profile and competencies required for teachers to be able to meet national curriculum goals. These standards, in turn, are the basis for teacher evaluation and certification. These steps have not yet been taken in Brazil.

Given Brazil’s size and diversity, minimum national standards (the Brazilian equivalent of the PRAXIS in the US) and a single national process of teacher certification could be an option. MEC has de facto begun establishing a national framework for teacher quality, analogous to the way it has handled the curriculum. The PCNs articulate a national set of curriculum goals that serve to orient the states’ programs and provide a framework for oversight and quality assurance across educational jurisdictions. Yet it allows states and municipalities the scope to design gradual and differentiated strategies towards the common goal. A national framework for teachers based on the Referenciais and the Proposta could similarly set out the “vision” for Brazilian teachers, while allowing states latitude in setting the more detailed standards that would be the basis for state-level teacher certification. By focusing on minimum standards, such a certification process would take account of the reality that for many states and municipalities the national vision of desired teacher competencies might not be achievable in a single step.

A second key lever for upgrading teacher quality is the establishment of standards and accreditation procedures for initial teacher education programs. While, the present arrangements under which SESU accredits federal and private programs while the states accredit programs in state universities are appropriate, the pervasive low quality of existing TTI programs suggest that standard requirements are not well developed – specially at the state level. It is recommended that federal and state actors work together towards the establishment of compatible standards for program accreditation. It is worth noting, however, that in a number of other countries, independent agencies or professional associations handle program accreditation at the higher education level. A variant on this in Brazil might be to establish a national panel of leading thinkers and practitioners to oversee the work of SESU and state accreditation agencies in the area of teacher training, given the current context of a strong national push to upgrade program quality sharply.
The experience of other countries and Brazil’s own experience over the past several years is that, no matter who is responsible for teacher standards, certification, or accreditation, the Ministry of Education retains two powerful levers over these processes with the SAEB and the PROVÃO. SAEB results will motivate states to keep tightening teacher certification standards as a way of increasing teacher quality. As soon as the PROVÃO is applied to teacher preparation programs, its results will provide accreditation agencies with an invaluable source of insight into program quality.

Teacher Professional Development
This is essentially a state responsibility today. The culture of university autonomy is so strong in Brazil that triggering the desired change to ISEs is likely to require an incentive. Brazil might consider a competitive fund as organized by Chile in 1997-98 to support universities with high-quality proposals for reform of teacher preparation in line with government parameters. In Chile, this has generated a rich menu of approaches and also stimulated professional dialogue across institutions.

Teacher Incentives
Incentives for teacher performance are fundamentally the responsibility of the state and municipal networks. But the federal government will have another major opportunity to influence the framework in at least four areas, all discussed in detail in Chapter VI: teacher compensation, when the FUNDEF law comes up for renewal in 2007; linking teacher rewards to outcomes in the classroom, through career plans and structures (PCCs) which discriminate between good versus poor performance; changing the way schools and teaching are organized and managed; and managing the changes brought about by the demographic transition and improvements in internal efficiency, the sustainability of the recent and future-mandated salary increases, and the funding of the teacher pension system. In all cases, it is recommended to focus as much as possible the attention of stakeholders on the goals, rather than particular institutional arrangements or processes (the "how").

Teacher Management
Modern decision making in a fluid and rapidly changing environment must be based on solid, continuously updated information originating from many different sources and allowing the monitoring of key teacher-related indicators. A teacher MIS with a GIS (geographic information system) interface would help considerably. In the short run, we recommend that it be at the state level with a Register of certified teachers and a network to promote inter-state exchanges and equivalencies. Overtime a nation-wide system articulating the three levels of government would facilitate the monitoring of supply and demand, the design of appropriate incentives to resolve problems of shortages or distribution and to target areas of need.

The federal government would be well advised to continue to generate and disseminate assessment and evaluation data (such as the results of SAEB, PROVÃO, ENEM, program evaluations, etc.) and promising innovations in teaching, teacher training and management. Disseminating evidence about programs and approaches that have not worked is often as important as disseminating successes. This could take the form of a network linking all secretariats as well as regional centers, "poles", teacher reference centers, etc., through a variety of supports, ranging from printed index cards and newsletters to videos and Internet chat-rooms.

The management of the teacher strategy is of such breadth and complexity that Brazil may want to consider broadening the mandate and membership of the existing Teacher Training Commission into a National Commission on Teachers and Teaching, responsible for coordinating the overall reform of teacher quality. Depending on the country, such Commissions as well as
Teacher Councils, have slightly different functions – from being the voice of the teachers in policymaking (Ireland) to accrediting programs or certifying teachers (Toronto, Canada).

ROLES AND RESPONSIBILITIES AT THE STATE LEVEL

Quality Assurance
The establishment of clear and comprehensive standards for teachers and a teacher certification process will be key challenges for state and municipal governments over the next several years. Teacher standards at the state level involve the translation of broader, nationally-determined principles into operational dimensions—specific areas and levels of content knowledge, specific pedagogical skills, behaviors and values. At present no state in Brazil has elaborated standards for teachers that match the best examples available internationally.

Ideally more states will follow the example of Ceará and recognize the benefits of states and municipalities collaborating on a unified standard and a single certification process that will serve teachers in both networks. Already teacher mobility across state and municipal school systems has increased significantly in Ceará, with municipal teachers for the first time eligible to compete for vacant teacher or school director positions in the state network, to the benefit of both the school networks and teachers themselves.

As discussed in Chapter IV, teacher certification processes are under revision in a large number of countries, in an effort to upgrade teacher quality, and are being considered by INEP. The approaches that appear most promising share several common elements:

First, they strive for a multi-dimensional evaluation of a teacher’s competencies and readiness to teach and combine academic tests with “portfolio reviews” that examine other aspects of a teacher’s work (such as her evaluations of students’ work, or contributions to a school’s development plan), and in some cases direct observations of teachers’ classroom interaction. Full-fledged reviews of this type cost more, but research suggests that they have a payoff.

Second, new approaches to teacher certification build in probationary internships, such as the estágio probatório proposed in Brazil. The key, however, is to ensure that the probation period is not just formalistic, but serves to weed out those with poor performance, offers compensatory help until their performance moves up. Otherwise, the institution of a probationary period contributes little.

As discussed earlier, a framework for the accreditation of teacher education programs should be established at the national level. Consistent with that framework, SESU and state authorities could collaborate in developing jointly detailed standards for the accreditation of teacher education programs in federal universities and private universities, who would remain a state responsibility. It would be highly desirable for state-level standards to be developed in conjunction with the municipalities and be applied statewide.

INCENTIVES
Another key challenge at the state level will be the revision of the PCCs along the lines described in Chapter VI. Countries all over the world are struggling to establish teacher incentive frameworks that link compensation to performance and the effective acquisition of competencies and skills, rather years of service and formal completion of training courses. Recruitment by competition (concurso), probationary periods (estágios probatórios), and putting teacher certification on a 5-10 year renewable basis, as is the recent trend in OECD countries, also
contemplated by INEP, make competency-linked incentives much easier to establish (see next section).

**Teacher Professional Development (PD)**
States are also responsible for the design and delivery of in-service teacher development programs. Research from OECD countries has shown that high-quality teacher continuous development programs can be instrumental in boosting teacher performance and student learning. Research has shown that making available multiple learning opportunities for teachers, combining content with pedagogy, bottom-up with top-down, on and off-site, whole school and individual training, visiting experts, etc... dramatically stimulates demand. Efforts to change the classroom practices described in Chapter II would be guided by a combination of standards, test results, and observations. This would require identifying teachers' and schools' professional development needs by measuring the gap between the school’s SDP goals and student assessment results—as detailed in the next section, with continuous reinforcement, offering teachers the opportunities to play different roles. This “learning organization” would look, again, like cogs, articulating different levels and sub-systems, with a common focus on “what it takes for all children to learn”. Professional networks—teamwork within schools, regular cluster encounters and interaction with the Higher Education Institutions—would be a key feature of such a “learning organization”.

The proposed *Institutos Superiores da Educação*, emphasizing content knowledge, the integration of theory and practice, and linkages with the school system, are consistent with international best practice. Effective ISEs could make it possible for states to treat teacher training as a lifelong activity, featuring strong pedagogical support and continuous feedback loops through internships and professional networks. ISEs’ program design would be aligned with teacher standards, and approved by the employers (states and municipal governments) in the form of performance contracts, if possible linked to funding. Given the large numbers to be trained, the use of technology, in distance teacher training, in the Institutes, and in the classroom, is bound to play a large role, and make major advances thanks to public-private sector partnerships.

**Teacher Management**
Even the highest quality pre-service training cannot guarantee a teacher’s effectiveness in the classroom or school quality. The environment at the school level and, more broadly across the school system, are crucial determinants of teachers’ performance.

Research shows that the two dimensions that matter for school quality are, on the one hand, support mechanisms to facilitate schools’ and teachers’ continuous learning and on the other hand, accountability mechanisms to stimulate performance. In Brazilian school systems, both aspects are generally weak. Pedagogical support on a more continuous basis could ensure coherence between national policies and classroom reality. It could identify and satisfy training needs, stimulate and disseminate innovation, and assist with the development and implementation of school development plans and improvement strategies. Ceará’s SAP is an interesting approach.

Accountability can be increased through periodic and meaningful school reviews based on the school development plan (SDP). Reviews could be conducted by quality assurance (QA) teams formed by the states and comprised of representatives of the employers, the technical support staff, and parents. In preparation for the review, the QA teams could require a survey of the community on the performance of the school; it could also use students’ assessment results and various evaluations (graduating student-teachers, schools, programs, etc.) to monitor progress towards the stated goals. Jointly with school staff and the community, the QA team would analyze the gaps between expectations and achievements and would help them develop an Action Plan that would be monitored. The SDPs would be contractual arrangements involving objectives,
rights and obligations as a basis for accountability. As envisaged in this report, they would require a census-based student assessment system to track students' learning progress school by school. They would also require periodic testing of teachers' themselves in the context of periodic re-certification reviews and systematic efforts to develop and evaluate school leaders.

However, the most difficult and important challenge of all will be teacher performance management. The teacher appraisal system would be embedded in the SDP reviews, taking into account the teacher's contribution to the team, his/her own development needs. It would be conducted by a mixed team and emphasize growth and support; however, it would ultimately involve consequences for persistent under-performers. The information generated would feed a professional conversation about school quality in general and the quality of teaching in particular. The use of the SDP as a school improvement mechanism would require a systematic recruitment and training effort to strengthen school leadership, along the criteria outlined in Chapter IV (vision and charisma, knowledge of teaching and learning, organizational and management skills, ethics, people skills, knowledge of national education policies).

As proposed in the Referencias, authorities are right to strongly encourage the practice of mentoring and tutoring, especially during beginning teachers' induction. This exercise should reflect the standards and be on paid time. Like the federal government, participating states may wish to consider the appointment of a formal body, (possibly a sub-set of the states' Education Council) to coordinate the implementation of their teacher strategy. Recent research in the US quoted by NCATE has shown that states, which have created such Standards Boards, are showing faster and stronger improvements in the quality of their teachers.

MUNICIPAL GOVERNMENTS
It would be a state responsibility to seek to implement the regime de colaboração recommended by the LDB and convince municipal governments to work towards coherent teacher standards, unified competition (concurso) for teacher recruitment, and similar performance contracts for state and municipal schools. Special incentives might be required.

The Vision as Seen From The School
The effectiveness of the instruments outlined here depends to a large extent on their transparency, perceived fairness, and focus on helping and celebrating rather than blame or sanction. Although the previous sections have focused on the federal, state and municipal responsibilities, the system proposed, far from being top-down, involves a number of bottom-up and horizontal linkages, and ultimately has the classroom as its focus.
PRIORITIZING AND SEQUENCING

At a broad level, the above strategy applies to all parts of Brazil, although the emphasis and pace would vary with the regions. The sequencing mapped out below should be seen as indicative only. Steps 2 and 3 could proceed in parallel, since they involve actually three different groups.

Step 1. Setting Teacher Standards. Recent World Bank discussions with various stakeholders in different parts of Brazil strongly suggest that a good entry point would be to develop teacher competency standards in selected states, starting from the existing PCNs, PCEs, Referenciais and Proposta de Diretrizes. Global experience suggests that this process should be participatory and that it would be more expeditious to start with the development of a prototype by a Commission consisting of representatives of MEC, CONSED & UNDIME, the interested states and municipalities, the profession and teacher educators. After consultations and appropriate revisions, the prototype could be piloted in the interested states and municipalities. The pilot would be designed to maximize collective learning, with built-in evaluations and a lesson dissemination process.

Step 2. Developing a Certification system and revising the PCCs in alignment with the Standards. As soon as an agreed set of teaching standards is available, work could proceed to develop: (i) a certification system; and (ii) revised PCCs. They would need be discussed and piloted in the same manner as above, with continuous feedback and dissemination through MEC, CONSED and UNDIME.
Step 3. Making the Standards a central part of the proposed ITE/ISE reform. Using as reference the agreed teaching standards, interested states and municipal could jointly formulate “Guidelines for the preparation of TTI Proposals”. If funding from MEC were available, based on these guidelines a competition could be organized between their TTIs interested in participating in the ITE/ISE reform. It would be preferable to tie funding assistance to the delivery of intermediate deliverables, rather than inputs. Without funding, change is likely to be slower until the certification mechanism is fully effective.

Step 4. Developing the remaining instruments in alignment with the standards. This phase, covering for instance the establishment of a standard-based teacher evaluation system, or of a revised School Development Plan/SDP model, would be an iterative process at 3 levels: (i) among the various teacher policy instruments, to ensure coherence; (ii) among the responsible state/municipal authorities within a given state; and (iii) between these and the federal/national institutions – MEC, CONSED, UNDIME, teacher educator and teacher associations, etc.

The strategy would be roughly the same nationwide, combining elements of structural and cultural change. However, in the North and Northeast, which are more rural, poorer, and less educationally developed, the emphasis should probably be on the cultural, participatory, and support dimensions of the strategy so as to “inject life” in the schools. In the more urbanized, privatized and competitive South, the issues are mainly managerial, and making the system more rigorous and accountable might be the priority. In implementing this recommendation, however, one should take into account the existence of pockets of poverty and low human capital development in the South as well.

RESEARCH AGENDA

Given the breadth and complexity of the rapidly changing teacher policy landscape in Brazil, this report as a first step has focused on proposing a broad analytical and operational framework. This framework now needs to be deepened, enriched and contextualized. Priority areas for further research cut across finance, planning and education:

FINANCING
- There is an urgent need for a deeper national and state-level analysis of the fiscal dimensions of the on-going and proposed reforms and their sustainability, taking into account the ongoing demographic and student flow trends and their full projected fiscal implications.
- An evaluation of teacher incentives, monetary and symbolic or professional, is also urgently due, from a multi-faceted perspective: fiscal impact, impact on student learning and on teacher performance. This study should look at different combinations of policy interventions to determine their relative cost-effectiveness.
- A cost analysis of different options for adjusting the pension benefits of education personnel would inform states’ and municipalities’ review and consideration of this key issue.
- Finally, an analysis of various ISE models, where unit costs can be compared with the “value-for-money” of existing and proposed models, would be a critical input into more concrete design efforts.

PLANNING AND MANAGEMENT
- Projections and analysis of teacher supply, demand and distribution are reportedly being conducted at the request of the Commission on Teacher Training. This would not only guide individual states with the structure and level of incentives needed to attract, retain and motivate better teachers. This information would also help the establishment of the teacher MIS/GIS recommended in this study to monitor and address shortages.
• To match the study of the fiscal impact of teacher reforms, it would be important to analyze state-by-state: (i) how these reforms effectively tackle the key teacher issues discussed here; (ii) how they interact among themselves and with the broader policy environment; (iii) how they impact on equity, and promote "quality learning for all children"; and (iv) which conditions are necessary for each of the sub-strategies to work.

• At the state level, conducting systematic evaluations of teacher policy initiatives could help strengthen the basis for accountability among stakeholders.

**EDUCATION**

• One of the most urgent pieces of research would be to conduct a “reverse tracer study” to identify promising classroom pedagogical practices associated with significant improvements in student learning in various regions of Brazil, and, in turn, the effectiveness of various ITE approaches and continuous development programs in explaining these outcomes.

• As part of a study on the relative impact of various state approaches to teacher appraisal and evaluation, there would be a need to pilot and evaluate alternative mechanisms to deliver to teachers constructive feedback and selective incentives to improve their performance.

• Finally, a multi-media mechanism along the lines of a clearinghouse could be created to improve the nationwide dissemination of best practices, promising innovations, and blind avenues in the area of teachers and teaching. A public/private consortium linking existing groups could do this.

**NEXT STEPS**

Since the 1999 MEC/World Bank workshop on Educational Quality Assurance and Teacher Professional Development, this report has benefited from detailed informal comments from MEC, and from selected representatives of CONSED and UNDIME. From the beginning the broad framework proposed has been found highly relevant. Because it endorses many elements of the strategy being implemented by the GOB and some particularly progressive states, reviewers have felt that a series of carefully planned discussions of the report, in specific settings and with different audiences, could contribute to views of “the way forward”, enriching the national and international debate on teacher policy, and advancing some innovative and promising ideas. There is agreement between the Government and World Bank officials that a full dissemination strategy should be jointly developed, leading ultimately to a joint publication. Short of a project which could have supported the implementation of the strategy, some Bank TA resources – modest in size but highly strategic in terms of timing and design – have already been devoted to the exploration, clarification, or operationalization, of specific teacher issues. Finally, the report outlines a research agenda that should be tackled in successive phases, in a collaborative format, possibly with other interested Brazilian institutions, LAC and international partners.
ACHIEVING ALIGNMENT & SYNERGY IN TEACHER POLICY

1. The teacher strategy presented in Chapter VII of the study on Teachers in Brazil proposes to create alignment and synergy by using as a common reference framework for all the elements of the policy, a seamless web of standards starting from teacher standards. Some of these have to do with structure/regulation, others with culture/social norms/participation. The more they overlap, the higher the likelihood of implementation and sustainability.
What are teacher standards?

2. They represent an effort at describing in a measurable or at least observable way “what a good teacher should know and be able to do”, i.e., the competencies required to implement the curriculum. A competency is a set of skills, values and behaviors which a teacher has acquired and can mobilize to confront a particular classroom situation.

For instance in a system which sees the school as a privileged locus for learning tolerance (value), the teacher should know about democratic principles and the background of his/her students (knowledge); (s)he should also treat all of the students with sensitivity/fairness and ensure that they respect one another, restrain from bullying, etc... (behavior). Graph A below illustrates the main competencies required in most US states (PRAXIS Certification test).

<table>
<thead>
<tr>
<th>Domain I: Planning and Preparation</th>
<th>Domain 3: Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1a: Demonstrating Knowledge of Content and Pedagogy</td>
<td>Component 3a: Communicating Clearly and Accurately</td>
</tr>
<tr>
<td>Component 1b: Demonstrating Knowledge of Students</td>
<td>Component 3b: Using Questioning and Discussion Techniques</td>
</tr>
<tr>
<td>Component 1c: Selecting Instructional Goals</td>
<td>Component 3c: Engaging Students in Learning</td>
</tr>
<tr>
<td>Component 1d: Demonstrating Knowledge of Resources</td>
<td>Component 3d: Providing Feedback to Students</td>
</tr>
<tr>
<td>Component 1e: Designing Coherent Instruction</td>
<td>Component 3e: Demonstrating Flexibility and Responsiveness</td>
</tr>
<tr>
<td>Component 1f: Assessing Student Learning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain II: The Classroom Environment</th>
<th>Domain 4: Professional Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 2a: Creating an Environment of Respect and Rapport</td>
<td>Component 4a: Reflecting on Teaching</td>
</tr>
<tr>
<td>Component 2b: Establishing a Culture for Learning</td>
<td>Component 4b: Maintaining Accurate Records</td>
</tr>
<tr>
<td>Component 2c: Managing Classroom Procedures</td>
<td>Component 4c: Communicating with Families</td>
</tr>
<tr>
<td>Component 2d: Managing Student Behavior</td>
<td>Component 4d: Contributing to the School and District</td>
</tr>
<tr>
<td>Component 2e: Organizing Physical Space</td>
<td>Component 4e: Growing and Developing Professionally</td>
</tr>
</tbody>
</table>

3. Note that PRAXIS distinguishes 4 broad domains of competency, each consisting of about 5-6 components. In turn each of these is further broken down into sub-components. For instance Component 1.a – Demonstrating knowledge of content and Pedagogy – features three elements: Knowledge of content, Knowledge of pre-requisite relationships, and Knowledge of content-related pedagogy. However, “knowledge of content” has been the sole focus of traditional university-level teacher preparation programs and has been essentially ignored in normal schools. It is also the only dimension which teacher testing can assess.

4. A few principles should guide the development of a system of standards (and assessment - the former is of little use without the latter):

- It should not be a bureaucratic, top-down exercise. Rather, it should involve all key stakeholders – the profession, employers, teacher trainers, and to a lesser extent parents and students representatives...
It can be initially quite simple (5-15 principles), and over time can get more and more elaborated by discipline and sub-discipline. The US, for instance, started with 5 principles and now have some 30 sets of standards by disciplines, levels of education, etc.

Good standards are both sufficiently specific to guide practice and be measurable/observable, and sufficiently open to leave room for individual teaching styles. They should include a summary (benchmark) and narratives of practice to guide improvements.

How can standards help build coherence between teaching policy and practice?

Aligning teacher standards on the curriculum and other key instruments of educational quality

5. The first step is to ensure that the teaching standards ("what a good teacher should know and be able to do") are aligned (upstream) with the curriculum standards, which describe what children are expected to learn. The specifications for the learning materials and the design of the assessment tests should also be aligned onto the curriculum. This will ensure that the teachers are trained to meet the curricular objectives, that textbooks reflect the curriculum, that test questions probe the extent to which the curriculum has been "learned-for-understanding", etc. The alignment is a never-ending, iterative process of adjustment.

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59 Some of the problems with SAEB 99 may have to do with that: a state curriculum, a national test, continuously catching up with each other.
Distinguishing between standards of practice and standards of performance

6. As a second step, one should make sure that the standards not only describe what teachers should know and be able to do in each of the domains and their sub-components (=standards of practice), but also reflect different levels of performance, both across and within different stages of the career. The standards of practice include a summary and a narrative. For the standards of performance, typically there are 4 levels: unsatisfactory (1), basic (2), proficient, career growth; (3), and distinguished, accomplished, or outstanding (4). Thus it could be said that:

- Level 2 performance represents the target for student-teacher graduation, initial teacher certification, the "induction contract" between the beginning teacher and its principal, and entry-level concurso requirements (licensing).
- Level 3 reflects professional development and maturity and can be the basis for a first promotion.
- Level 4 is the target for advanced certification, mentor status or headmastership.

Of course at any stage of their career teachers will get uneven ratings across the various domains being assessed. (For concrete illustrations of different levels of teacher performance, see the Scottish indicators: http://www.scotland.gov.uk/structure/hmi/hgios.htm).

6. A continuum of clear standards will (i) ensure that teachers know what they are expected to demonstrate at different stages of their career; (ii) help their evaluators know what to look for; (iii) make it possible to identify "areas for growth" in the performance of serving teachers and to design professional development programs which address them. (See for instance ETS’ C. Danielson “Enhancing classroom practice”.)
<table>
<thead>
<tr>
<th>Element</th>
<th>Level of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Content</td>
<td></td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>Teacher makes content errors or does not correct content</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>basic content errors or does not correct content</td>
</tr>
<tr>
<td>content errors</td>
<td>knowledge but cannot articulate connections with</td>
</tr>
<tr>
<td>students make.</td>
<td>other parts of the discipline or with other disciplines.</td>
</tr>
<tr>
<td>Basic</td>
<td>Teacher displays basic content knowledge and makes</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>connections between the content and other parts of the</td>
</tr>
<tr>
<td>content knowledge</td>
<td>discipline and other disciplines.</td>
</tr>
<tr>
<td>Proficient</td>
<td>Teacher displays solid content knowledge and makes</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>connections between the content and other parts of the</td>
</tr>
<tr>
<td>Distinguished</td>
<td>discipline and other disciplines.</td>
</tr>
<tr>
<td>Knowledge of Prerequisite</td>
<td>Teacher displays little understanding of prerequisite</td>
</tr>
<tr>
<td>Relationships</td>
<td>knowledge important for student learning of the content.</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>Teacher indicates some awareness of prerequisite</td>
</tr>
<tr>
<td>little understanding of</td>
<td>learning, although such knowledge may be incomplete</td>
</tr>
<tr>
<td>prerequisite knowledge</td>
<td>or inaccurate.</td>
</tr>
<tr>
<td>important for student learning of the content.</td>
<td>Teacher's plans and practices reflect understanding of prerequisite relationships among topics and concepts.</td>
</tr>
<tr>
<td>Knowledge of Content-Related</td>
<td>Teacher displays little understanding of pedagogical</td>
</tr>
<tr>
<td>Pedagogy</td>
<td>issues involved in student learning of the content.</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>Teacher displays basic pedagogical knowledge but does not</td>
</tr>
<tr>
<td>little understanding of</td>
<td>anticipate student misconceptions.</td>
</tr>
<tr>
<td>pedagogical issues</td>
<td>Pedagogical practices reflect current research on best</td>
</tr>
<tr>
<td>involved in student learning</td>
<td>pedagogical practice within the discipline but without</td>
</tr>
<tr>
<td>of the content.</td>
<td>anticipating student misconceptions.</td>
</tr>
<tr>
<td>Teacher displays</td>
<td>Teacher actively builds on knowledge of prerequisite</td>
</tr>
<tr>
<td>continuing search for best</td>
<td>relationships when describing instruction or seeking</td>
</tr>
<tr>
<td>practice and anticipates</td>
<td>causes for student misunderstanding.</td>
</tr>
<tr>
<td>student misconceptions.</td>
<td></td>
</tr>
</tbody>
</table>

**Figure E.1**

**Domain 1: Planning and Preparation**

Component 1: Demonstrating Knowledge of Content and Pedagogy

Elements:

- Knowledge of Content
- Knowledge of Prerequisite Relationships
- Knowledge of Content-Related Pedagogy
Developing a Teacher "Professional Career."

7. The third step is to link the teacher standards with career steps, requesting not only evidence of higher performance in the basic domains of practice as the teacher progresses in his/her career, but also that, in order to be promoted, he/she take on new responsibilities such as mentoring less experienced colleagues, while remaining in the classroom. This is what is generally meant by a professional career. In the Cincinnati school system, for instance, teachers will be rated on a four-point scale in four areas that reflect 16 standards:

- The **apprentice** for a recent graduate or inductee, not yet certified
- The **novice** or beginner, who must have 2s or better in all domains
- The **career** stage, requiring 3s or better in all domains
- The *advanced* stage, where teachers must have a 4 in "teaching for learning" domain and at least one other domain, and at least 3s in all other domains.

- The *accomplished* stage, for teachers with 4s in all domains.

There can be fewer stages in the career structure. For instance, in Chile and Vietnam there are only three.

**Career Levels**

8. Seen as a continuum, the career above would look like the Graph below. It should be noted that teachers would undergo routine appraisal every year, re-certification every five year, and evaluation for promotion when they meet the criteria for the next career level and feel ready.
Providing for Adequate Incentives

9. The salary differentials should be adequate to incentivate progression beyond the minimum required. In the Cincinnati model, the differential is about US$3,000, between 2 categories, except for the ‘accomplished category for which it is US$5,000 (see for instance http://www.worldbank.org/publicsector/civilservice/).

Maximizing teacher quality within budget, by combining minimal quality requirements for all teachers, with opportunities for accelerated career progression for some

10. In order to continuously improve the quality of the teaching corps, while achieving a normal salary curve, and containing the growth of the teacher salary budget, the options available are to:

- **Demand** that teachers in the early categories progress rapidly to the Career level, e.g., apprentices be confirmed as novices following the probationary internship, and novices to be certified/licensed, after their induction period, e.g., no more than 2-3 years in total.

- **Allow** teachers in the career, advanced and accomplished categories to remain there throughout their careers while **requiring** that they undergo periodic re-certification process at the level they have reached in order to retain the right to teach. Re-certification typically takes place every 5 years and over time can be made increasingly challenging to ensure continuous upgrading of the entire teaching body as their average level of competence rises.

- **Make it possible** for more motivated or more ambitious teachers to seek accelerated promotions through a yearly review.

This “Up or out” approach can be found for instance in the Province of Ontario, Canada, where teachers have a choice between a growth path and an exit path. The accelerated path is featured in the new UK and Chile career structure.
Other Coherence-Building Instruments

Further illustrations of how standards can help improve alignment, coherence and synergy include student-teacher formative and summative evaluation, school development plans, contractual arrangements between TTIs and teacher employers (state and municipal governments), performance contracts for Directors and “work program agreements” for teachers.
### ANNEX II: Systemic POLICY /PROGRAM RECOMMENDATIONS With a Central Goal:
“Making sure all children learn for understanding”

<table>
<thead>
<tr>
<th>A. Strengthen the Quality Assurance Framework:</th>
<th>TARGET</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fully develop &amp; articulate the Vision, Goals, standards and performance contracts at each level of the education/ administrative system</td>
<td>All levels of the system: Federal state, municipal, TTI, schools, teachers</td>
<td>Throughout report</td>
</tr>
<tr>
<td>Why? In order to build coherence between policy and classroom practice in the very quality, and school performance with increasing levels of specificity, as a basis for judging progress, guiding improvement, and ensuring accountability in the decentralized Brazilian education system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? Translating the goals into operational standards for teaching, teacher education programs, certification and career progression.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Introduce teacher initial and periodic certification</td>
<td>State</td>
<td>Chapter IV</td>
</tr>
<tr>
<td>Why? To ensure that only teachers with attributes which make a difference in the classroom are hired and that they continuously update their competencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? Based on Teacher quality standards cascading from the federal to the state/municipal level. As per the LDB, eligibility conditions would include tertiary-level preparation in an accredited TTI &amp; satisfactory completion of 2 year probationary internship. National “ registro” of certified teachers could help to promote mobility. (cf. MIS under C).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fully implement the new (renewable) Teacher Education Program Accreditation</td>
<td>National</td>
<td>Chapter III</td>
</tr>
<tr>
<td>Why? This new system offers better prospects for the continuous improvement and updating of teacher education programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? Based on standards of program accreditation ((Referenciais). Responsibility remains in MEC/SESu and states., following aligned procedures and criteria. Over time could be shifted to an autonomous agency or in the longer term, to a national professional body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Consolidate the culture of assessment and evaluation</td>
<td>Federal</td>
<td>Chapter IV</td>
</tr>
<tr>
<td>Why? Because what is measured gets attention. SAEB and PROVÃO have begun changing behaviors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? (i) evaluate teachers regularly in context of School Development Plan, their contribution to it and their own development needs but recognize the limits of student cognitive tests to measure teacher effectiveness and balance with performance tests (such as peer observations or portfolio); (ii) introduce census-based student testing at state level as basis for guiding teacher practice &amp; school improvement and for rewarding schools with most value-added; (iii) complement with formative assessment &amp; evaluation to guide improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Balance autonomy with accountability</td>
<td>Employers/ TTI’s and schools</td>
<td>Chapter VI</td>
</tr>
<tr>
<td>Why? Schools improve when they make their own choices. But in to-day’s competitive and fiscally conscious environment, and given concern for “quality education for all” teachers and schools must be accountable for student learning and for their efforts in pursuit of that goal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? (i) A growth-oriented School Development Plan at school level, to be evaluated by“ Quality Assurance teams” in a process of participatory “whole-school” reviews; (ii) For TTI’s, a performance contract with employers; (iii) for teachers, a work program agreement in the context of the SDP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Implement the New Paradigm of Teacher Preparation and Continuous Professional Development (PD)

1. Introduce the key principles of the new paradigm: lifelong learning, systemic approach, aligned with broad system goals, orientation towards results, focus on the entire school, PD embedded in research and driven by demand along with supply, collegial culture:

*Why?* Because there is some evidence that they may work, based on recent research on knowledge acquisition.

*How?* In line with absorptive capacity. Think big, start small. At a very minimum, establish a strong school support system and build the complexity from there. Use carefully evaluated technology to make quality TT delivery accessible to all.

2. Proceed cautiously with ISE

*Why?* The model is promising but not proven yet.

*How?* Internally: modeling the approaches desired in classrooms. Externally: (i) Performance-based, renewable program accreditation (cf. A.3); (ii) PROVAO (cf. A.4); (iii) standard-based teacher certification (cf. A.2.); (iv) “whole institution” approach for local recruitment in rural areas; (v) federal or state incentives (such as Competitive Fund) to stimulate TTI’s interest in reforming their programs within government-set parameters; (vi) setting of teacher quality standards (based on desired competencies); (vi) selecting and training a cadre of teacher educators which balances academics and experienced hands-on teachers; (vii) contracting a network of schools for practicum, internships, applied research; (viii) building in the model tracer studies and empirical evaluations of training impact on classroom practice and student learning as basis for accreditation (and continued government support in the case of public TTIs/IESs).

3. Promote teacher professional networks

*Why?* Research shows that this is how teachers learn best & teacher learning is positively correlated to student learning

*How?* Within the school, through pedagogical teamwork; with other schools (cluster), through regular, supervised encounters; at a regional level, under the leadership of teacher support centers; nationally, through professional associations; internationally, through an internet and other media based clearing house on successful (pedagogical or managerial) innovations

4. Identify teachers’ professional development needs in the context of the School Development Plan

*Why?* To ensure that it responds to the specific needs of the school.

*How?* By triangulating between the desired state (the SDP) and reality (student assessment and community survey).

5. Systematize the mentoring and tutoring system

*Why?* To tap the experience of seasoned teachers for the benefits of younger or struggling colleagues. Could also be a partial solution to the challenges raised by the demographic transition which will increase demand for grades 5-8 teachers

*How?* Special focus on the “induction” phase (“estágio probatório”) and support to colleagues needing help. More effective if based on teacher standards, paid time, with clear expectations. Incentives to keep good teacher beyond legal retirement age should be considered.
C. Teacher Management at the system and school levels

1. **Make initial teacher recruitment more stringent**
   - **Why?** (cf. A.2)
   - **How?** (i) “Concurso único”; (ii) teacher certification (A.2); (iii) keeping alternative certification (when it means below standards) to a minimum.

2. **Define and implement a policy to staff hardship areas (rural, slums)**
   - **Why?** To reach the most at-risk children who usually get the weakest teachers (if any)
   - **How?** Options: local recruitment and training, use of technology, housing incentives, bonuses, accelerated career

3. **Restructuring teacher career to encourage continuous professional development and reward good classroom performance**
   - **Why?** Present structure is “flat”; fails to motivate teachers past a certain age and encourages early departure
   - **How?** (i) Periodic teacher appraisal, evaluation and certification, based on standards (cf. A.2); (ii) reward entire schools, based on value-added (cf. D.3)

4. **Organize schools for learning**
   - **Why?** The benefits of improved training will only be maximized if teachers are placed in schools where all factors are combined to support student learning
   - **How?** This requires a systemic process which calls for managerial and instructional leadership (Directors), vision, alignment of practices with expected goals, a collegial culture, linkages with the system and the community for support and accountability

5. **Develop support system for schools**
   - **Why?** Education reform is a learning experiment which requires continuous support, challenge, and reinforcement.
   - **How?** A combination of public/private technical assistance providers, operating as a network around regional support centers.

6. **Create a teacher Management Information System with a Geographic Information System interface**
   - **Why?** To rationalize teacher management at each level of government, monitor supply and demand, shortages, changes in teacher profiles, etc...
   - **How?** Linking existing databases and adding the GIS component. System to be articulated at all three levels of government. Could (eventually) form the basis for an inter-state equivalency system.

7. **Continue disseminating information, to stimulate TTI and school improvement and guide student choices**
   - **Why?** This is a key enabling function of a modern state
   - **How?** INEP could broaden the scope of its evaluations (PROVAO, research) and continue disseminating results; add a nationwide, multimedia clearinghouse function to (i) disseminate information on innovations (in teacher training, teaching, teacher management) that work and approaches that do not; (ii) provide a chatroom for education professionals, as well as intra and Internet access.
### D. Introduce Better Designed, Selective Incentives

<table>
<thead>
<tr>
<th>1. Revise FUNDEF to reward systems with a QA mechanism</th>
<th>Federal</th>
<th>Chapter VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why? To strengthen coherence between policies and classroom practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? When FUNDEF is revised (2007), consider targeting salary increases on certified teachers and school systems with a QA infrastructure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Consider rewarding entire school teams along with individual teachers</th>
<th>States &amp; municipal governments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Why? Traditional merit pay goes against the collegial school culture shown by research to promote effective teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? Evaluate teachers in context of SDP. Reward teams with highest value-added in assessment scores (and other criteria depending on reform priorities) , and give additional symbolic/professional rewards to individuals with exceptional performance.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Link career plan, teacher development and incentives</th>
<th>State &amp; municipal governments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Why? To reward effort and results, encourage continuous learning, and increase accountability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? Through teacher evaluation within the context of the standard-based career plan and SDP, all geared towards ensuring learning for all students.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Modify the teacher pension regime</th>
<th>Federal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Why? Present system, with early retirement and 1-to-1 link between salary and pension increases (i) deprives the education system of its most experienced teachers and (ii) is not fiscally sustainable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How? (i) reconsider age of retirement for future teachers; (ii) offer incentives for experienced teachers near retirement to continue teaching or serving as mentors or tutors; (iii) de-link the salary increases from the pension increases.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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