Fernando M. Reimers *Editor*

Audacious Education Purposes

How Governments Transform the Goals of Education Systems

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Chapter 1
Thinking Multidimensionally About Ambitious Educational Change

Fernando M. Reimers

Abstract As the demands for civic and economic participation increase, the result of technological, economic and social transformations, and in response to a rapidly changing world and to new challenges, many governments have turned to schools to provide students with opportunities to develop the skills necessary to thrive. This chapter traces the roots of education reforms that seek to develop a breadth of skills, to educate the whole child, reviewing the emergence of the field of comparative education as the first public education systems were created, and examining the role of the international development architecture built after world war II in advancing the global education movement. The chapter then examines the more recent efforts to develop twenty-first century skills. It then introduces the present comparative study of education reforms in Brazil, Finland, Japan, Mexico, Peru, Poland, Portugal and Russia, describing the basic tenets of each of those reforms. The chapter then examines how instruction and learning compare in these countries, using data from the latest survey of teacher practices conducted by the OECD (TALIS – The OECD teaching and learning international survey. http://www.oecd.org/education/talis/. Accessed 3 Dec 2019).

The core argument of the chapter is that education reforms can be framed in five alternative ways, depending on which elements of the process of educational change they highlight: cultural, psychological, professional, institutional and political. Each of these frames is explicated and used to discuss the reforms examined in this book. The analysis shows that in practice, none of the reforms adopts a comprehensive multidimensional approach that draws from these five perspectives. Institutional and political perspectives are more common, and cultural and psychological perspective less so.

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1.1 Introduction

The question of what goals should animate the efforts to educate students is as old as the first educational institutions themselves in many different societies and civilizations. Educational institutions exist to serve a variety of purposes and it is with respect to those purposes that it is possible to make decisions about how to educate. For most of human history, the purpose of educational institutions was to educate only some members of society, typically those expected to take on leadership positions of some sort - political, religious or administrative.

As the idea that schools should educate many, perhaps all, of the younger members of a society took hold and led to the creation of national systems of education in the eighteenth century in Europe, questions of purpose resurfaced with new urgency. Given the need to figure out what to teach all children and how to do it, some education leaders saw value in learning from the experience of various jurisdictions, thus beginning the field of comparative education.

John Quincy Adams, for example, a diplomat and the sixth president of the United States, published a series of observations of the schools in Prussia in his book 'Letters on Silesia' in which he described for his contemporaries in Boston how these institutions had been set up and funded. In a letter written in Berlin, dated March 7th 1801, Adams describes admiringly the success of Frederick the II, who ruled Prussia from 1740 until 1786, in instituting a system of publicly funded schools to educate all children, for the purpose of teaching them to read and introducing them to science. In his letters Adams explained how the spread of literacy increased the circulation of newspapers, which would serve as avenues of lifelong learning. Adams described how providing school masters with a public wage, enabled the creation of schools for elementary instruction of all classes of people. Further, he notes the creation of the public school drove the search for specialized preparation for schoolmasters, so they could become more effective teaching all students to read. In response to this need for specialized and effective training, Adams reports, an Augustine monk, Felbiger, devised an effective method of instruction which was disseminated at these normal schools to prepare teachers. Adams talks admiringly about Frederick the II, 'the greatest general of his age, eminent as a writer in the highest departments of literature, descending, in a manner to teach the alphabet to the children of his kingdom, bestowing his care, his persevering assiduity, his influence and his power, in diffusing plain and useful knowledge among his subjects, in opening to their minds the first and most important pages of the book of science." (Adams 1804, pp. 371–372).

About the same time that John Quincy Adams was writing admiringly in Silesia of Frederick II's efforts to establish a public education system to educate all children, Marc Antoine Jullien, a French journalist, politician and diplomat, was writing in Paris about educational purposes and methods as public education systems were being established in Europe. Jullien studied the perspectives on the aims of education of two leading educators at the time: Johann Heinrich Pestalozzi and Joseph Lancaster (Jullien 1812). Pestalozzi created an institute in Burgdorf Switzerland

committed to offering students a rich curriculum for the purpose of fostering the development of a wide range of capacities. Jullien corresponded frequently with Pestalozzi and sent three of his children to study at one of his institutes. Joseph Lancaster, in turn, had created an approach to educate all children at low cost, the monitorial method of instruction, in a more limited range of capacities. The free elementary school Lancaster established in Southwark, England, in 1798, served as the laboratory to develop the method he would describe in his book *Improvements in Education*, published in 1803. Jullien became a promoter of the monitorial system of education Lancaster had devised. So enthused was Jullien with the promise of such systematic study of various educational approaches to inform questions of educational purpose that he proposed a systematic survey of how schools were organized in diverse jurisdictions. He subsequently organized the documentation and exchange of diverse education approaches and developed proposals for the organization of public education (Jullien 1817a, 1835, 1842). He also shared his education publications with political leaders of his time, including Thomas Jefferson (Jullien 1817b).

As public education expanded across the word, learning from the experience of others became one of the strategies of those leading such expansion. In the United States, for example, Horace Mann, the first secretary of education of Massachusetts, wrote a report based on a study tour of Germany and France's education systems in 1843 which was pivotal in his campaign to establish public education in the state (Mann 1844). Similarly, Domingo Faustino Sarmiento, the first person to propose a public education system for the emerging independent republics in South America, did so after a tour to study the education systems in Europe and a visit to Boston to meet Horace Mann to discuss his ideas for the *Common School* (Sarmiento 1849).

It was such exchanges of ideas and comparative education experiences that supported the remarkable expansion of access to education which took place over the last century, particularly after education was included in the Universal Declaration of Human Rights adopted in December of 1948 by the newly created United Nations. Article 26 of the Universal Declaration of Human Rights, the milestone of the educational expansion which took place in the twentieth century, describes that right in this way:

(1) Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.
(2) Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.
(3) Parents have a prior right to choose the kind of education that shall be given to their children.

In declaring that all have the right to elementary education, the article states that education should be directed to the full development of the human personality (as Johann Heinrich Pestalozzi had proposed) and in particular to the ethical goals of 'strengthening respect for human rights and fundamental freedoms… promot[ing]

understanding, tolerance and friendship among all nations, racial or religious groups…" (United Nations 1948).

The inclusion of the right to education in the Universal Declaration, and the establishment of UNESCO, the specialized United Nations agency to promote education, science and culture, had the effect of animating and supporting governments in advancing education for all in five ways: as a laboratory of ideas, disseminating and promoting good education practices, developing education standards, building capacity, and catalyzing international co-operation. These activities resulted in considerable adoption of norms and standards and in a significant transfer of knowledge about how to educate all children, for what purposes and in what way. The resulting expansion of education was dramatic. In 1945, before the establishment of UNESCO, the world's population stood at 2.5 billion, of which less than half had any access to school. Seven decades later, with a world population at 7.5 billion, 85% had some access to school (Roser and Ortiz-Ospina 2019).

The transfer of knowledge which spurred such massive global transformation in educational opportunity is reflected in conference proceedings and in UNESCO publications. Some of the public documents reflecting this work were produced for particular countries and world regions, others had a global audience. For example, in the late 1980s, UNESCO's regional office for education in Latin America and the Caribbean produced, in partnership with the United Nations Economic Commission for Latin America and the Caribbean, an education manifesto which focused on the need to align education with the twin objectives of advancing economic competitiveness in economies increasingly integrated into the world economy and based on knowledge, with the objective of advancing democratization (ECLAC-UNESCO 1992).

Two efforts stand out in UNESCO's history producing documents that would respond to important global imperatives and drive education developments globally. By the end of the 1960s, educational access had increased significantly during the previous two decades. Such expansion was bringing about new questions about what goals should drive educational expansion.

In 1968, Phillip Coombs published the landmark report 'The World Crisis in Education. A System's Analysis' in which he argued that education systems were failing to adapt to the velocity of social and technological changes around them (Coombs 1968). This book, which contributed the powerful idea that education systems should be understood as *systems,* was the product of a conference at Williamsburg, Virginia, convened in 1967 at the initiative of US President Lyndon B. Johnson by Cornell University president James Perkins. The conference convened 150 government leaders, university presidents, professors, researchers and social scientists from 50 countries. Coombs, who had been the first US Assistant Secretary of State for Education and Culture and was at the time of the conference director of UNESCO's International Institute for Educational Planning (tasked with providing technical assistance to developing nations in expanding their education systems) wrote the paper which provided the intellectual framing for the

conference. The essence of the world crisis in education that the conference was convened to address was summarized by Coombs as follows:

> The nature of this crisis is suggested by the words 'change', 'adaptation,' and 'disparity.' Since 1945, all countries have undergone fantastically swift environmental changes, brought about by a number of concurrent world-wide revolutions –in science and technology, in economic and political affairs, in demographic and social structures. Educational systems have also grown and changed more rapidly than ever before. But they have adapted all too slowly to the faster pace of events on the move all around them. The consequent disparity –taking many forms—between educational systems and their environments is the essence of the worldwide crisis in education. (Coombs 1968, p. 4)

Reflecting this emerging concern with the relevance of education, in 1970, in response to a mandate of UNESCO's General Conference, which convened all education ministers from member states, the organization's director general asked Edgar Faure, a former Minister of Education of France, to head an international commission to prepare a report on the future of education. The report put forth the humanistic idea that the fundamental goal of education should be to prepare students to be lifelong learners, as the commission anticipated a future of accelerating change and of growing expectations of economic and political participation from people (Faure et al. 1972). The recent memories of the student movements of the late 1960s in France, the United States and other countries undoubtedly shaped these views. Faure had been appointed Minister of Education at the height of the French student demonstrations in 1968. The ambitious goal of preparing students for lifelong learning opened up conversations around the world about which capacities would equip people for such a task.

The ambitions articulated in the 1972 Faure report, appropriately titled 'Learning to Be', would not materialize any time soon for many countries as during the 1980s many countries in the developing world experienced economic crises and adjustment programs which constrained social expenditures, including in education. Because of the resulting impact on social development, the period was termed 'the lost decade' by several scholars and analysts (Reimers 1990; Sims and Romero 2013). At the end of that decade, in 1990, UNESCO, other international development agencies, and multiple governments, organized an 'Education For All' conference, designed to re-animate the global commitment to education and to relaunch investments in education. A few years later, as part of the same efforts to reanimate global enthusiasm for education, UNESCO's director general asked former European Commission chairman Jacques Delors, to head a commission that would draft another global manifesto proposing directions for education. The result of a massive effort of global consultations spanning 3 years, the Delors Report, published in 1996, proposed an audacious vision of education anchored on the concept of 'learning throughout life' and on four goals for education: learning to know, to do, to be and to live together (Delors 1996). That report too sparked global conversations about the need for a broader and more ambitious set of goals to animate government's efforts in educating all children.

A year after the Delors report was published, and as national and global conversations began to take on its recommendations to think more ambitiously about what human capacities schools should develop, the Organization for Economic Cooperation and Development launched an undertaking that would lead to greater operational clarity with regards to such capacities, the Definition and Selection of Competencies Project (known as the DeSeCo Project). The result of this expert consultation was to identify key competencies and help define overarching goals for education systems and lifelong learning (Rychen and Salganik 2001, 2003). The DeSeCo Project identified as key competencies: interacting in socially heterogeneous groups, acting autonomously and using tools interactively. It argued that each competency has an internal structure comprising various domains, for instance, the ability to cooperate encompasses: knowledge, cognitive skills, practical skills, attitudes, emotions, values and ethics and motivation related to cooperation (Rychen and Salganik 2003, p. 44).

The Delors Report and the DeSeCo Project, and similar national efforts undertaken in various countries to revisit what capacities would be necessary to participate in a rapidly changing world, influenced governments to revisit national standards and curriculum frameworks. Complementing those efforts, OECD's Program of International Student Assessment, which started concomitantly with the DeSeCo project, generated further interest on the knowledge and skills that students around the world had gained by the age of 15 (OECD 2019b).

More recently, the OECD undertook an initiative, Education 2030, aimed at developing a consensus on competencies that schools should cultivate (OECD 2018). Similarly, the UN Sustainable Development Goals, under the goal for education, emphasize education quality with a series of ambitious specific targets such as educating for environmental sustainability and global citizenship. UNESCO has recently established an expert international commission to develop a new framework for education purposes.

The last two decades have consequently seen remarkable transformation of public education systems around the world. Governments have focused more resources and attention on education, attempted more ambitious goals for education, and undertaken numerous innovations to achieve the ambitious goals of preparing students for the twenty-first century. This enhanced education activity provides a trove of comparative experience about how governments approach the question of aligning public education systems with more ambitious goals. Learning from such comparative experience is the goal of the Global Education Innovation Initiative I lead at Harvard University. A collaborative with research institutions in several countries, we have carried out a series of studies to learn from such efforts to reform public education systems. This book presents the results of one of those studies, comprising an analysis of national education reforms in Brazil, Finland, Japan, Mexico, Poland, Portugal, Peru and Russia. Previous studies have examined national curriculum reforms and programs of teacher professional development in Chile, China, Colombia, India, Mexico, United States, and Singapore (Reimers and Chung 2016, 2018).

These countries were chosen because, together, they enroll a considerable population of school-age children, their education systems are at various stages of

institutional development, they all had attempted ambitious education reforms, and there was sufficient evidence in all of them, including evidence regarding student learning outcomes, to conduct studies with a sound empirical grounding in terms of how education reforms were implemented and in terms of the realities of instruction and student learning. In addition, the selection of countries covered by the Global Education Innovation Initiative included identifying institutional and individual partners in each country with the interest, capacity and resources to carry out the studies. As with most selection of countries to be included in a comparative study, ours is arbitrary, it is not a random selection of countries around the world, or a selection intended to be representative of reforms around the world. Our selection of convenience does attempt to include countries from diverse regions of the world and countries at various stages of education development and effectiveness. The countries we studied vary considerably in terms of per capita income, or in terms of per student expenditure. Similarly, the countries included in this study include some which had long achieved almost universal enrollment in primary and secondary, as well as others were such universal access was more recent, or even not yet realized. In terms of levels of student knowledge and skills as measured by the OECD's Programme of International Student Assessment, the countries covered in this book include those where students achieve at the highest levels in the world distribution of student achievement as well as at the lowest levels, with countries in which students perform in the middle of the world distribution of PISA scores. In the most recent administration of the PISA assessment, Finland, Poland and Japan, are among the 18 OECD countries whose students on average perform above the OECD average, whereas Brazil, Mexico, Russia, and Peru, are among the countries whose students on average perform below the OECD average (OECD 2019a, b, Table 1.1). At the same time, the countries studied include countries where student achievement increased since PISA was first implemented in 2000: Poland, Portugal, Mexico, Russia, Brazil and Peru; as well as countries where student achievement decreased: Finland and Japan (Ibid). Table 1.1 summarizes the average levels of students achievement and of change over time for the countries in the study and for the OECD on average.

Purpose and Content of This Book

In this book we study how governments in eight countries approached the transformation of public education systems to help students gain a broader range of competencies which would equip them for civic and economic participation as economies and societies become more complex. We examine the elements that were included in the design of those reforms, including changes in curriculum, student assessments, teacher and principal supports, the organization of schools, and other structures aimed at achieving new learning outcomes. We also examine what is known about the implementation of those reforms, including how they were received, what challenges they faced, and, when available, evidence on the results these reforms achieved. We hope that studying how various countries have reformed education will be useful to policy makers leading educational reforms in the future, and of interest to scholars of the process of educational change. In particular, we hope the

Table 1.1 Average levels of student achievement in PISA in 2018 and average rate of change since 2000

	Mean score in PISA 2018			Long-term trend: Average rate of change in performance, per three-year-period			Short-term change in performance (PISA 2015 to PISA 2018)		
	Reading	Mathematics	Science	Reading	Mathematics	Science	Reading	Mathematics	Science
	Mean	Mean	Mean	Score dif.	Score dif.	Score dif.	Score dif.	Score dif.	Score dif.
OECD average	487	489	489	0	-1	-2	-3	2	-2
Finland	520	507	522	**-5**	**-9**	**-11**	-6	-4	**-9**
Poland	512	516	511	**5**	**5**	2	6	**11**	**10**
Japan	504	527	529	1	0	-1	**-12**	-5	**-9**
Portugal	492	492	492	**4**	**6**	**4**	-6	1	**-9**
Russia	479	488	478	**7**	**5**	0	**-16**	-6	**-9**
Mexico	420	409	419	2	**3**	2	-3	1	3
Brazil	413	384	404	3	**5**	2	6	6	3
Peru	401	400	404	**14**	**12**	**13**	3	**13**	8

Source: OECD 2019b PISA 2018 Results (Volume I) – Table I-1 Snapshot of performance in reading, mathematics and science Pages 17–18
Values that are statistically significant are marked in bold

study of how education systems take on an ambitious set of goals, intended to make education more responsive to the demands of a changing external environment, will illuminate the dynamics of educational change and increase our understanding of educational institutions. Much of the pre-existing knowledge, largely based on the study of attempts to reform education in the United States, argues that educational institutions change very little in response to policy mandates, particularly in terms of transforming the basic grammar of schooling (Tyack and Tobin 1994; Tyack and Cuban 1995; Olson 2003). Richard Elmore's conclusion about why most education reforms in the United States have failed to influence instruction illustrates this perspective:

> a systemic incapacity of U.S. schools and the practitioners who work in them, to develop, incorporate and extend new ideas about teaching in anything but a small fraction of schools and classrooms. This incapacity, I argue, is rooted primarily in the incentive structures in which teachers and administrators work. (Elmore 1996, p. 1)

This perspective on the prospects of change in the United States is congruent with the evidence that student achievement levels in assessments such as PISA have not significantly changed in two decades, as seen in Table 1.1. Canada, another jurisdiction on which much of the published knowledge of the process of educational change is based, is also a country in which levels of student knowledge and skills as measured by PISA have remained flat over the last two decades (OECD 2019b, Table I.1). However, given that levels of student knowledge and skills, measured with the same assessments, have increased significantly in countries such as Poland, Portugal, Peru and Russia, it stands to reason that the knowledge about the process of educational change developed from the study of the US or Canadian experience might be inherently limited to account for the same process in other

jurisdictions, in a nutshell it is knowledge largely based on reforms that have failed to produce significant change in student learning outcomes.

The thesis of this introductory chapter, illustrated by the case studies presented in the chapters which follow, is that when government leaders reform education they depend on models of the education system which highlight one or several of the following dimensions: **cultural**, **psychological**, **professional**, **institutional**, **or political**. Theoretically, this multidimensional framework which I develop more fully in another recent book (Reimers 2020) serves three purposes. The first is to help examine the internal coherence of the analysis and planning of the process of change from the perspective of each of these five dimensions, if a reform follows an institutional logic, is it coherent? is it complete from the standpoint of an institutional perspective? If it follows a psychological perspective, is it coherent and complete? The second purpose this multidimensional framework serves is to offer an opportunity to comprehensively address the process of change as viewed from each of these five dimensions. Are there elements of the change process which help better understand how a reform was designed or how it was implemented through one of these perspectives than through others? The third is that thinking about the interdependence of these five dimensions can help sequence the phases in a strategy of educational change and the process of change itself, these models are complementary to each other and thinking of reform as a five-dimensional chess game can make the process of change more effective than viewing the same process through a singular lens. The chapters in this study reveal that while all these dimensions are helpful to illuminate certain aspects of the education system and of the process to change it, no reform in this study demonstrates a comprehensive approach that encompasses actions reflecting all of these five dimensions.

Examining the reforms discussed in this book through this framework reveals that, in practice, these reforms are approached through one or two of these perspectives, but seldom use all of them comprehensively. Examined from the logic of the perspectives used by the reforms, coherence is often elusive. These chapters also illustrate that the strategies followed to transform public education lacked a clear and coherent staged sequence of the process of educational change. In spite of these deficiencies, however, these cases show that governments have the power to significantly transform educational institutions, through rules, regulations and allocation of financial resources, and that they are decidedly pursuing an education that attempts to equip students with a broader set of competencies than has been the norm in the past. The cases also illustrate the globalization of reform institutions. Similar ideas animate the various efforts examined in this book, such as the desire to insert in the curriculum a series of transversal competencies focusing on socio-emotional domains. Also, similar instruments and organizations play a role supporting these efforts. For instance, the OECD and the cross-national assessments they sponsor are part of the repertoire used by reformers in most of the cases examined in this book.

It should be noted that the reforms studied in this book are at various stages of implementation, although all of the reforms studied have been on the government agenda for at least one presidential term. The reforms in Brazil and Mexico, for instance, are at more incipient stages than those in Japan or Poland. The length of

the cycles of reform reflected in this book also varies, from those that may not survive a single presidential administration (Brazil or Mexico), to those that span decades (Japan or Russia). Some of the reforms are in fact long policy cycles which include distinct stages in a long arc of reforms (Finland, Japan, Portugal and Russia).

To plan this study, the authors convened at a conference at which we developed a common approach to the national case studies based on our then emerging theories of how governments had approached educational change and on the findings of the previous two cross-national studies of the Global Education Innovation Initiative. Based on that framework they collected and analyzed the evidence presented in these chapters. The collective revisions, and collegial discussion and feedback to these drafts, enhanced the intellectual coherence of the final product.

We used a common thematic outline to conduct the studies and draft the chapters presenting the findings covering the following topics:

1. What was the purpose of the reform? what time frame was covered by the reform?
2. What is the core argument about reform supported by this case? what sources of evidence were used?
3. What Context preceded and gave rise to the reform? What this a reform part of the agenda of a new government? A response to an economic crisis? What were the educational antecedents of this reform? What were the factors which gave impetus to a reform agenda? Were there international influences of any sort? Did international evidence or ideas influence the context?
4. Description of the reform: what were the intended goals, what were the key components of this reform (change in law, budget, curriculum, assessment, etc.), what was the underlying theory of change of the reform? Who participated in the design of the reform and in its implementation?
5. In what way did the educational goals of the country's reform relate to the idea of twenty-first century skills or breadth of skills or cognitive and socio-emotional development? Which specific outcomes and skills were emphasized in the reform?
6. Which specific components of the reform are directly related with the development of twenty-first century skills in students? How are they implemented? Description of specific programs that develop twenty-first century skills. (Curriculum, assessment, school autonomy, partnerships, specific programs in schools such as project based learning or specific programs of teacher professional development)
7. What were the various stages of implementation of the reform? Who participated? How are governments (federal/local) coordinating with other stakeholders?
8. What is known about the politics of the reform? Which factors supported implementation? Which impeded it?
9. What do we know about the results of the reform achieved so far? Have they been evaluated? What are the challenges?

Chapter 2 presents Brazil's efforts to transform the curriculum. A coalition of individuals and organizations in civil society, government and universities, successfully advocated for a set of national curriculum standards. The development of those

standards took place over a five-year period, between 2013 and 2018. The low levels of performance of Brazilian students in national and international assessments of student knowledge and skills provided the motivation for this social movement. A private foundation organized this movement to develop a common core. Study trips were organized to learn from the experiences with common standards in the United States, and experts from Australia, Chile, and Canada shared the experiences in those countries with the Brazilian leaders of the reform. The standards focused on ten competencies that would cut-across the various subjects. This effort built on earlier attempt at developing common standards in the late 1990s, which provided schools with a series of documents presenting those standards for optional use, as schools have statutory autonomy over pedagogical matters. The underlying theory of change of this effort was that a national common core would allow alignment and coherence among local curricula, teacher preparation, instructional resources and student assessment. The curriculum was developed by a large committee of university professors, teachers, education administrators at the state and municipal level, and other educators and went through three rounds of consultations over several years. A draft was presented for feedback via an online consultation in which over 200,000 teachers participated. The curriculum was revised based on that feedback. Subsequent feedback rounds included a second consultation on a draft to the states and municipalities, and a third consultation in the form of a series of public hearings with stakeholder groups such as unions, associations, universities, and others. The third version of the curriculum incorporated a series of transversal competencies such as lifelong learning, critical thinking, aesthetic sensibilities, communication skills, digital literacy, entrepreneurship, self-care, empathy, citizenship and ethics. A presidential transition resulted in narrowing the focus of the standards exclusively to early childhood and primary education (up to the age of 14), postponing the standards for secondary education for another year. The scale of the country and the complex distributed nature of educational governance have been a challenge for the implementation of those standards. As a way to support state level writing of curriculum aligned to those standards, the ministry of education is financing training and offering support to curriculum writers and encouraging collaboration in curriculum development between state departments of education and municipal departments. A federally funded national textbook program was another instrument to translate the national standards into actual lesson plans, though they may not reflect the state and city designed curriculum. At present, schools of education, who oppose the standards, have not aligned teacher education to them. A resolution of the national education council mandates that assessments are aligned to the national standards.

Chapter 3 analyzes Finland's reform to address twenty-first century education through revisions to the curriculum and teacher preparation. The Finnish government initiated a process of curriculum re-design following a careful analysis and debate on which competencies were necessary for the twenty-first century and building on OECD's work through the DESECO project and other relevant analyses of the twenty-first century competences and learning. The re-design was prompted by declining student performance in PISA assessments and shortcomings in

pedagogy and teacher collaboration identified by TALIS (the OECD Teaching and Learning International Survey). In a governance structure where curriculum is a shared responsibility between the national and local level and schools and teachers have ample autonomy, the approach to designing and implementing these changes was highly collaborative and participatory. Technology was used to engage a diverse, large number of participants in the curriculum revision process. A number of government-funded pilots were used to test some of the ideas generated in the participatory process.

A strength of the reform process in Finland was its highly participatory nature, involving schools of education, university faculty from various disciplines, teachers, school principals, teacher educators, the ministry of education, and teacher unions. Also distinctive was the reformers' thoughtful consideration of existing research on twenty-first century skills to help them identify a set of transversal competencies which were the basis of the curriculum redesign and the design of teacher professional learning. The reform of the basic education curriculum created explicit objectives to develop twenty-first century competencies for each of the subjects and proposed a new curricular space in which schools would develop local curriculum for interdisciplinary integration in project-based activities, which are supportive for learning of transversal competences. To support local innovation in curriculum redesign, a network was established to foster cross-school collaboration. Evaluation and research played a central role in identifying the shortcomings that the reform needed to address at multiple levels: students, classrooms, teachers, schools, cities and society, as well as in assessing implementation of the national core curriculum at the local level and identifying challenges in integrating transversal competencies into pedagogy. The reform focused on the following transversal competencies: taking care of oneself, managing daily life, multiliteracy, digital competence, working life competence, entrepreneurship, participation, building a sustainable future, learning to learn, and cultural competence. A highly participatory and collaborative process was also followed to generate a strategy to align teacher education and professional development with twenty-first century competencies. A number of pilot projects to develop those competencies were funded and evaluated by the education evaluation center.

Chapter 4 studies Japan's comprehensive set of reforms to align education with a broader set of curriculum standards, including school evaluation, the introduction of national student assessment systems, teacher education, reforms in university admissions exams, curriculum reform, greater community participation in school governance and additional supports for low performing schools.

The roots of these reforms go back to a 1984 report which recommended shifting from rote learning towards fostering autonomy. Public support for these reforms waned when Japanese students scored at low levels in PISA assessments in 2003 and 2006. Since Japan introduced additional supports for low performing schools, performance of Japanese students in the PISA assessments topped the global ranking. The changes in school governance focused on creating mechanisms which allowed greater autonomy for schools, and principals in particular. During the reforms of the 1990s, to support the implementation of the new curriculum focused

on developing student agency, higher order cognitive skills and problem-solving skills, national and municipal projects supported teacher education and created model schools for pedagogical research. The transition from knowledge acquisition to knowledge application was challenging for many schools. During the 2000s the curriculum reforms diminished the content of the curriculum in order to create a period for integrated study to provide more time for independent learning and thinking. Each school would decide how to use the period for integrated study. Academic performance of students declined with the reduction in instructional time. A new set of curriculum standards in 2010 broadened the set of competencies reflecting international policy discourse. Together with the introduction of an evaluation system, the governance reforms increased the autonomy of the board of education and schools for the implementation of the reforms.

Chapter 5 examines Mexico's comprehensive education reform, part of a series of structural reforms undertaken during the Presidential administration of 2012–2018. The reform included the creation of mechanisms to professionalize the teaching profession, the elimination of the teacher union's role in teachers' appointments, and an ambitious new curriculum focused on twenty-first century skills. While the reform did spell out which teacher capacities were essential and should be assessed, the investment in teacher development was modest relative to what was necessary to develop the capacities necessary to teach the new curriculum.

A trigger for the reform were the well-known low levels of performance and inequality in educational outcomes, documented by national and international assessments, as well as information on the pedagogical practices and teacher initial preparation of teachers documented by OECD studies of teachers' characteristics and pedagogy (OECD 2019a). The reform included five components: a new curriculum, more autonomy for schools and a clear focus on learning, teacher career pathways including a reform of teacher education, a focus on equity and inclusion, and governance supporting more participation by families. The teacher career reform has been the most controversial aspect of the reform, because it required the introduction of teacher performance assessments.

The curriculum reform has a decided focus on twenty-first century skills, and the objective of making education relevant to the needs of the twenty-first century appears centrally in all key reform documents. The curriculum standards included the following cognitive, interpersonal and intrapersonal skills: language and communication, mathematical thinking, understanding the natural and social worlds, critical thinking and problem solving, socio-emotional abilities and personal goals, team work and collaboration, citizenship and social life, creativity and artistic appreciation, health care, environmental care and digital abilities. Performance standards for each of these were developed for each of the four cycles of compulsory education: preschool, primary, secondary and high school. These goals were submitted for public consultation and were then broadly communicated to educators and other stakeholders. The ministry of education developed a competency framework aligned to those standards. The framework has three domains: academic knowledge, social and personal development (which includes socio-emotional learning) and curricular autonomy to allow for school level curriculum planning, so

as to cater to the educational needs and individual interests of students. By the time the implementation reform began, the administration had only 18 months left in office. The curriculum was broadly disseminated through online courses, though there was no specific effort to build pedagogical skills to teach the new competencies. The reform design and implementation were top down, with limited opportunities for participation from teachers and other groups including civil society organizations. One area where there was participation from civil society was in the portion of the curriculum which was designed to be 'autonomous', which opened opportunities for schools to develop local curriculum in partnership with civil society education organizations. The arrival of a new presidential administration undermined the implementation of the reform.

Chapter 6 examines Peru's education reform, which reflect a comprehensive set of actions to transform the education system, including a multipronged strategy to strengthen the teaching profession. Building on an existing consensus that the country had achieved relatively high levels of access and school completion without commensurate attention to quality and equity, the reform sought to focus on learning opportunities for all students. It was able to do so because in 2003 Peru adopted a student learning assessment system in the second grade which showed student learning levels were stagnant. In addition, participation in the PISA cross-national assessment of student knowledge and skills in 2012 shocked the nation, as Peruvian students were at the bottom of the world's distributions of scores. In response to those results, Peru launched an ambitious education reform focused on improving learning outcomes based on four pillars, which were to be pursued simultaneously and comprehensively: (a) strengthen the teaching career and improve the value of the teaching profession, (b) improve opportunities to learn for all, (c) improve school and system management and (d) close gaps in school infrastructure. Each of those pillars encompassed multiple actions.

In order to increase the value of the teaching profession, the reform passed a law that introduced meritocracy into the profession, rewarding effort and performance, and focusing the career on its effectiveness in improving learning and the students' experience in school. It created financial incentives to support talented high school graduates to select the teaching career, it created systems of teacher assessment for entry into the profession and for career advancement, created financial incentives to reward teaching effectiveness and work in schools in disadvantaged areas, and supported teacher professional development including support for beginning teachers, and school based coaching for teachers in early childhood centers and multi-graded schools.

To improve opportunity to learn, the reform revised the curriculum, supported bilingual education for indigenous students, provided support for students with special learning needs, expanded access to early childhood education, offered professional development to elementary schools, increased the duration of the school day in secondary schools. The curriculum reform included a broad set of national consultations with many stakeholders, and a review of global best practices in curriculum reform. The new curriculum defines the competencies students are to gain at each level, and specified learning standards. School support included the

development of sample lesson plans, training workshops, mentoring and professional development communities and technology enabled coaching. An important component of the secondary school reform was the creation of new professional roles to support students, such as school psychologists, social workers, tutors and pedagogical coordinators. The ministry funded also a small number of magnet schools designed to provide students, competitively selected, access to the challenging curriculum of the International Baccalaureate Diploma.

Several institutional reforms were introduced to elevate the quality of tertiary education. The new University Law established a new regulatory institution that would establish and monitor basic quality standards and provide a license to public and private universities. A new policy included information systems, an accreditation mechanism, quality assurance program, and also offered scholarships and loans to support college access.

To improve school and system level management, the reform increased school autonomy and the number of administrative positions at the school level in order to free up principal time for instructional leadership. New criteria for the selection of principals were introduced, focused on demonstrated competency, and professional development on instructional leadership opportunities were offered to school principals. Additional management improvements were introduced in system level administrative structures, including project planning and monitoring mechanisms, including information systems and dashboards to follow up every school.

To address the infrastructure gap the reform conducted a comprehensive census of needs, increased investment, promoted public private partnerships and supported improvement programs.

Chapter 7 discusses a long period of educational change in Poland. Beginning with a comprehensive reform in 1999, with roots in the economic and political changes which began in 1989 to reduce the role of the central state and promote private markets, the education reforms were comprised of a redesigned core curriculum, focusing on higher order skills and on personal and social competencies, as well as on educational structures and governance aimed at providing more autonomy to schools and teachers and to support pedagogical innovation. The crux of the reform was the creation of a separate lower secondary school level – the culminating level of primary education. The separate lower secondary schools allowed the creation of clusters with feeder elementary schools, which enabled the hiring of subject specialists for rural areas. They also created an opportunity to hire new school principals, who came into these new structures with a mandate to innovate curriculum and pedagogy with the aims of promoting collaboration and a new school culture. The national curriculum explicitly included transversal skills such as learning, thinking, research, action, self-improvement, communication and cooperation. The curriculum emphasized attitudes aligned with honesty, credibility, responsibility, perseverance, self-esteem, respect for others, curiosity, creativity, entrepreneurship, politeness, participation, initiative, group work and civic engagement. The civic skills emphasized were literacy, mathematical reasoning, scientific thinking, communication skills, ICT skills, ability to learn, and ability to work collaboratively.

The reform expected schools to develop syllabi and select their own textbooks. While there were multiple efforts to communicate to teachers the goals of the reform and the new curriculum, given the short implementation timeline those were not matched by deliberate efforts to help teachers develop new pedagogical skills. Supporting the implementation of the new curriculum were a series of booklets conveying the key goals and concepts of the reform that were delivered to schools. Private publishers responded to the opportunities created by the new curriculum to offer new textbooks, which included pedagogical suggestions. Textbook publishers also organized professional development conferences to discuss pedagogical approaches to support the new curriculum. The reform also introduced standardized examinations at the end of each education cycle, which were aligned with the cognitive skills in the new curriculum.

The reform was designed and implemented rapidly, which undermined the capacity to develop deep expertise among teachers and principals in line with the goals of the new curriculum. The potential to select their own syllabi, for instance, was often not realized because teachers did not have sufficient time to familiarize themselves with the syllabi. These challenges, particularly in the early stages of implementation of the reform, shaped a negative public view of the reform.

In spite of the fact that students' performance in PISA showed significant improvement since the reforms were introduced, there was insufficient public support for some of the reform changes and insufficient attention to communicating the goals and means of the reform and cultivating public support. Evaluation was used to make formative improvements to the reform, for instance PISA results were used to inform a revision of the curriculum in 2008 to emphasize higher order skills. A political change in 2015 discontinued the reforms and eliminated lower secondary schools – which was opposed by most educators.

Chapter 8 reviews a long period of educational change in Portugal, led by different political administrations, exhibiting somewhat different education strategies but with the common focus on improving student learning outcomes as measured in national and cross-national assessments of student knowledge and skills. The initiation of these reforms dates back to 2001, following a decade of significant educational expansion which had brought increased contention regarding the tradeoffs between access and quality of education. The 1995 TIMSS results revealed that Portuguese students achieved at the lowest levels among the group of countries participating in the assessment. The results from the first PISA study in 2000 were similar. These results animated the calls for reform and empowered those advocating for greater focus on educational quality. In 2001 the government's decision to publicize high school exit examinations per school fostered a conversation on the variation in results that schools serving similar student populations achieved. Later, a Ministerial commission was tasked to improve the curriculum in mathematics and sciences. New exams in those subjects were introduced at the end of compulsory basic education. This was followed by focused efforts to improve instruction in literacy and mathematics through voluntary activities in schools and libraries to develop motivation to read. Learning standards were introduced in those subjects. These pragmatic reforms were followed by a more comprehensive set of changes

implemented between 2011–2015, during a period of economic adjustment. These changes included the expansion of basic education from nine to twelve years, the creation of a technical and vocational track for upper secondary school, and a revision of the curriculum prioritizing the core academic subjects, first literacy and math, subsequently history, geography, sciences and English. The approach of curriculum revision was to seek greater coherence, through small incremental changes. Changes in the evaluation of textbooks produced greater alignment between the textbooks and the new curriculum standards. The reform also introduced frequent and reliable student assessments, and created an independent agency to assess student knowledge and skills. Specific measures were adopted to reduce school dropout, including supporting schools in providing extra-academic support to struggling students. School autonomy was augmented and non-monetary incentives were used to focus attention on school improvement in student learning outcomes. So far, the reforms have relied on existing experienced teachers, but the renewal with well-prepared teachers is an ongoing concern, as more than half of teachers will retire in the next 10 years. The reforms from 2005 to 2015 attempted to improve teacher selection and initial education, but these efforts were met with much contention.

Chapter 9 examines a series of education reforms which began in Russia after the opening of the Russian economy and the political reforms in the 1990s. In the early stage of those reforms there was a drive for educational innovation to foster a wider range of competencies laying the foundation for a movement of innovative teachers who drafted a 'Manifesto for a Pedagogy of Cooperation' which advocated for cooperation among teachers, students and parents, holistic personal and professional development, and greater school autonomy. With greater communication with education communities outside Russia, Russian educators became more knowledgeable of educational innovation in the rest of the world. In 2001, the Russian government issued a framework to modernize education which included competency-based education and a broader set of goals for the curriculum. In 2004 a new set of curriculum standards was approved, focusing on knowledge of the disciplines and holistic development of students' personality. Those standards were progressively revised over the following five years, involving a wide range of stakeholder consultations in various regions in Russia. However, due to minimal participation from teachers and innovative educators the standards were written in fairly inaccessible language. The resulting Federal Education Standards focused on cognitive skills as well as transversal skills and personal competencies. No provisions were made to support teachers in developing the pedagogical skills to teach to those standards. It was instead expected that a number of other structural reforms would provide the opportunity for schools and regions to organize the necessary training to deliver the new curriculum. Those reforms included greater school autonomy and equalization of financing based on school enrollment, freedom for regions to select their own programs of teacher professional development in a competitive market of providers of professional development, provision of internet to schools, which afforded teachers the opportunity to find resources and collaborate with colleagues online, and increase in elective curriculum for schools, giving them more freedom to shape a portion of the curriculum. Greater curricular freedom was first tried in a

number of experimental schools and pilot municipalities and regions. Those pilots were not evaluated. Implementation of the competency-based curriculum has been hampered by the absence of an overall strategy to implement those skills, and a number of competing policy priorities and challenges to the idea of twenty-first century skills from groups advocating for disciplinary education. This resulted in conservative backlash when many parents and teachers requested to go "back to the Soviet roots" of the memorization of factual knowledge and routine cognitive operations. These public sentiments were supported by new educational policy leaders that claimed that new challenges do not need new answers.

1.2 What Does Teaching Look Like in These Countries and Is It Changing as These Reforms Are Implemented?

Drawing on the latest OECD study of teachers, the TALIS 2018 study, this section examines the instructional context in the countries examined in this book, relative to the average responses for the OECD. These data do not allow us to determine causally what impact the reforms discussed in this book had on these practices, but merely whether the practices in the countries indicated provide some evidence that instruction is indeed aligned with developing a broader set of skills for students. Since we don't know what the initial conditions were in these countries, the observed levels of those practices do not convey how much has changed in each country. Since Peru and Portugal did not participate in Talis we can't report on instructional practices in those countries.

Most teachers in the OECD countries (over 70%) see their colleagues as open to new ideas about teaching and learning and as collaborators in trying out new ideas. These figures are comparable or higher for all the countries included in this book, with the exception of Portugal, where only 65% of teachers report that their colleagues are open to innovation (OECD 2019a, Table I.2.35).

A precondition for teaching is to be able to manage a classroom. TALIS 2018 results show that while 72% of the teachers report that they receive classroom management preparation in their initial training, only 53% feel well prepared in this field, and only half of the teachers had recent professional development in this area. While 14% of all teachers surveyed report a high need for professional development in classroom management, this figure is much greater in Japan (43%). Most teachers (85%) feel that they can control disruptive behavior in classroom; yet again the figure is lower in Japan (60%). One third of the teachers report that they lose instructional time because of their inability to manage classroom discipline (OECD 2019a, Figure I.1.4).

Most teachers engage in basic classroom management practices aligned with teacher-directed instruction, telling students to follow rules, directing student attention to the class, address disruptive students, and indicate to students to listen. Additionally, most teachers report that they implement known good practices for

teaching directed instruction: summarize recent content, set goals for each lesson, convey expected learning, and explain the relationship between old and new content. The percentage of teachers who report doing this is lower in Finland than in the rest of the countries and lower in Japan for summarizing recently learned content (OECD 2019a, Table I.2.1).

Substantially fewer teachers use instructional approaches that require students to work independently, in small groups, or in challenging problems. Only a third of the teachers present students with problems for which there is no obvious solution, a much lower percentage in Japan (16%) but significantly greater in Brazil (49%), Portugal (67%) and Russia (58%). Only three in five teachers give students tasks that require critical thinking, this figure is significantly higher in Brazil (84%) and much lower in Japan (13%). Only half of the teachers have students work in small groups, decide on their own how to solve tasks, or allow students to use ICT for projects or class work. Three-fourth of the teachers use everyday examples to make visible the value of what students are learning and provide students opportunities to practice to check for understanding of concepts (OECD 2019a, Table I.2.1).

To assess student work, most teachers administer their own assessments. This figure is much lower in Japan (51%) and Russia (39%). Three in five teachers provide students with written feedback on their work, in addition to a grade, this practice is much lower in Japan (26%) and Russia (16%). Only two in five teachers let students evaluate their own progress, and four in five observe students as they work on tasks and provide immediate feedback (OECD 2019a, Table I.2.6).

As information technology becomes ubiquitous, a relevant education must provide students the capacity to use technology in work and life. More than half of the teachers have had access to Information and Communication Technologies (ICT) for teaching in their initial preparation, 56% on average in the OECD. Two in five teachers feel well prepared to use it, thought this figure is much lower in Finland and Japan. Three in five have received recent professional development on this subject. One in five expresses a significant need for professional development in this domain, this percentage is 39% in the case of Japan. About half of teachers use ICT in projects or class work (OECD 2019a, Figure I.1.1).

As a result of internal and international migration, classrooms have become more culturally and linguistically diverse. On average, 18% of the teachers in the OECD teach in classrooms where at least 10% of the students have a first language which differs from the language of instruction. Only one in three teachers learned about multicultural education in their initial education, and consequently only one in four feels prepared to teach in a multicultural setting. Only one in five teachers reports recent professional development on this subject. 15% of teachers declare a high need for professional development in a multilingual setting, this figure is much higher in Brazil (44%), Mexico (46%) and Portugal (22%). Two thirds of the teachers report that they can cope with the challenges of teaching in a multilingual class, the figure is much lower in Japan (17%) (OECD 2019a, Figure I.1.2)

A feature of a twenty-first century education is greater inclusion, a commitment to educating all students, including students with special learning needs. On average, 27% of the teachers in the OECD teach classes where more than 10% of

students have special needs. Two thirds receive training for inclusion in their initial education and 44% feel well prepared to include children with special needs in their classrooms. Only 43% of the teachers have had recent professional development on this topic, and one in five expresses a high need for such training. A third of the principals express a shortage of teachers with those skills (OECD 2019a, Figure I.1.3).

Instructional practices have changed in the countries studied in this book as shown in Table 1.2. The OECD compared responses from teachers to a similar survey administered in 2013 and in 2018 on a limited range of instructional practices. While there are no significant changes on the presentation of a summary of recently learned content, there are significant changes in most other countries in referring to a problem from everyday life to explain the significant of new concepts, having students work in small groups to solve a problem, providing students projects that require more than a week to complete and allowing students to use ICT for projects or classwork. In addition, in Portugal, there was an 11.9 percentage point (pp) increase in the percent of teachers who let students practice similar tasks until it is clear each student has understood the subject matter. The greatest increases are in the percentage of teachers who allows students to use ICT for projects. There are only three significant changes in a direction away from deeper learning: in Brazil, the percentage of teachers who report that they have students work in small groups decreased by 10 percentage points, and in Japan and Mexico the percentage of teachers who provide students with assignments which require more than a week to complete declined by 3 and 3.4 percentage points, respectively.

There are also changes in how teachers assess student work, the most significant increase (except for Brazil) is in the percentage of teachers who administer their own assessments. The percentage of teachers who provide students written feedback on their work, in addition to a grade, also increased in Brazil, Finland, Japan and Mexico, but decreased in Portugal and Russia. The percentage of teachers who let student assess their own progress increased considerably in Finland (17.6 pp), and also in Japan (3.9 pp), but decreased in Brazil (3.3 pp). The percentage of teachers who observe students work on a task and provide immediate feedback increased in Brazil, Finland and Mexico, but decreased in Russia (Table 1.3).

1.3 A Multidimensional View of Educational Change

The study of governments' approaches to reforming education in these eight countries suggests that each reform strategy incorporates elements of some of five different perspectives: cultural, psychological, professional, institutional, and political, albeit with different emphases. As explained in my recent book on the process of educational change on which this section draws extensively (Reimers 2020), these are not mutually exclusive perspectives, but each of them focuses on certain elements of the change process. Conceptualizing the approaches to reform through these perspectives is helpful in three ways. First it can help examine the internal

Table 1.2 Change in teaching practices from 2013 to 2018

	Percentage of teachers who report that they "frequently" or "always" use the following teaching practices in class							
	Present a summary of recently learned content				Have students work in small groups to come up with a joint solution to a problem or task			
	TALIS 2013	TALIS 2018	Change between 2013 and 2018		TALIS 2013	TALIS 2018	Change between 2013 and 2018	
	%	%	% dif.	S.E.	%	%	% dif.	S.E.
Brazil	79.2	81.6	2.4	(1.2)	65.6	55.6	**−10.0**	(1.8)
Finland	62.0	59.7	−2.3	(1.6)	36.7	42.3	**5.6**	(1.7)
Japan	59.8	58.6	−1.3	(1.4)	32.5	44.4	**11.9**	(1.9)
Mexico	62.8	65.6	2.8	(1.6)	73.4	70.9	−2.5	(1.6)
Portugal	84.8	84.4	−0.4	(1.0)	49.0	49.9	1.0	(1.3)
Russia[a]	62.8	66.4	3.5	(1.9)	43.3	42.5	−0.8	(2.1)
	Refer to a problem from everyday life or work to demonstrate why new knowledge is useful				**Give students projects that require at least one week to complete**			
Brazil	89.4	91.3	**2.0**	(0.9)	38.4	43.4	**5.0**	(1.9)
Finland	63.7	68.2	**4.5**	(1.6)	14.1	22.4	**8.3**	(1.2)
Japan	50.9	53.9	**3.0**	(1.3)	14.1	11.1	**−3.0**	(0.9)
Mexico	84.8	89.2	**4.4**	(1.0)	57.1	53.8	**−3.4**	(1.5)
Portugal	65.6	93.1	**27.5**	(1.1)	21.1	32.2	**11.1**	(1.2)
Russia[a]	79.5	79.5	0.0	(1.5)	22.1	25.9	**3.8**	(1.7)
	Let students practice similar tasks until I know that every student has understood the subject matter				**Let students use Information and Communication Technology for projects or class work**			
Brazil	74.2	75.9	1.7	(1.6)	30.3	41.6	**11.3**	(1.9)
Finland	50.7	50.4	−0.3	(1.5)	18.2	50.7	**32.5**	(1.8)
Japan	31.9	31.3	−0.6	(1.3)	9.9	17.9	**7.9**	(1.2)
Mexico	79.8	81.7	1.9	(1.5)	56.2	68.7	**12.5**	(1.8)
Portugal	60.9	72.9	**11.9**	(1.3)	34.4	56.8	**22.5**	(1.3)
Russia[a]	76.1	77.4	1.3	(1.7)	47.6	69.0	**21.3**	(1.9)

From OECD (2019a, Table I.2.4)
Values that are statistically significant are marked in bold
[a]Moscow excluded from TALIS 2018. Estimated changes need to be interpreted with great care.

coherence of a reform strategy within each perspective, if it is part of the reform design. Secondly, it can help ask whether there are aspects of the situation which call for the use of a complementary perspective to the one that is guiding the reform strategy. Arguably, the design of a change process would be more comprehensive if it used a multidimensional perspective. Finally, a multidimensional view of change can help design the sequence of actions to be undertaken in a long arc of educational change.

Table 1.3 Change in teachers' assessment practices from 2013 to 2018

	Percentage of teachers who report that they "frequently" or "always" use the following methods of assessing student learning in their class[1]					
	Administer own assessment[2]					
	TALIS 2013		TALIS 2018		Change between 2013 and 2018 (TALIS 2018 – TALIS 2013)	
	%	S.E.	%	S.E.	% dif.	S.E.
Brazil	93.4	(0.4)	94.1	(0.6)	0.7	(0.8)
Finland	66.2	(1.2)	85.8	(0.9)	**19.5**	(1.5)
Japan	29.1	(0.8)	51.2	(1.2)	**22.1**	(1.5)
Mexico	78.7	(0.9)	84.1	(0.9)	**5.5**	(1.3)
Portugal	82.5	(0.6)	97.3	(0.4)	**14.8**	(0.7)
Russia[a]	27.1	(1.2)	38.6	(1.2)	**11.5**	(1.7)
	Provide written feedback on student work in addition to a mark					
Brazil	61.7	(0.9)	73.0	(1.3)	**11.4**	(1.6)
Finland	25.2	(1.0)	38.2	(1.2)	**13.0**	(1.6)
Japan	22.9	(1.0)	26.3	(1.0)	**3.4**	(1.4)
Mexico	73.1	(1.0)	80.5	(0.9)	**7.3**	(1.3)
Portugal	75.5	(0.7)	68.8	(0.9)	**−6.7**	(1.1)
Russia[a]	18.7	(1.1)	15.7	(1.0)	**−3.0**	(1.5)
	Let students evaluate their own progress					
Brazil	43.1	(0.8)	39.9	(1.3)	**−3.3**	(1.5)
Finland	27.2	(1.2)	44.8	(1.3)	**17.6**	(1.8)
Japan	27.0	(1.1)	30.8	(1.0)	**3.9**	(1.5)
Mexico	61.5	(1.3)	59.9	(1.1)	−1.6	(1.7)
Portugal	59.2	(0.9)	61.4	(1.1)	2.2	(1.4)
Russia[a]	42.2	(1.6)	38.3	(1.4)	−3.9	(2.1)
	Observe students when working on particular tasks and provide immediate feedback					
Brazil	80.9	(0.8)	84.4	(1.2)	**3.5**	(1.5)
Finland	76.1	(0.8)	79.0	(1.0)	**2.9**	(1.3)
Japan	43.0	(0.9)	41.2	(1.1)	−1.8	(1.4)
Mexico	90.8	(0.6)	92.5	(0.6)	**1.7**	(0.9)
Portugal	89.5	(0.5)	90.4	(0.5)	0.9	(0.8)
Russia[a]	76.4	(1.2)	68.7	(1.3)	**−7.7**	(1.8)

From OECD (2019a, Table I.2.9)

Values that are statistically significant are marked in bold

[1]These data are reported by teachers and refer to a randomly chosen class they currently teach from their weekly timetable.

[2]In 2013, teachers were asked about the frequency with which they "develop and administer their own assessment".

[a]Moscow excluded from TALIS 2018. Estimated changes need to be interpreted with great care.

Because of limits to institutional capacity, resources and political capital, governments must establish a few priorities at any given time. A way to think about those priorities is as stages in a longer process of educational change, where priorities achieved in each stage set the conditions that enable other priorities to be pursued at subsequent stages. It is not necessarily the case that all reforms should address elements from each of these five perspectives, as some may be more relevant at a given time and context than others. I see these five perspectives, as described below, as illuminating elements of the process of change which are in interaction with each other:

- Cultural perspective: focuses on the broader set of external social expectations, norms and values which define what are accepted education goals and practices and imperatives for change
- Psychological perspective: reflects the theories of learning which undergird the learning and teaching process for students, teachers, administrators and parents
- Professional perspective: focuses on how roles are constructed to bring expertise to bear in instructional practice
- Institutional perspective: attends to the various structures, processes and resources that provide resiliency to the system of education, governing the interactions among the actors that form the system and providing stability and meaning to teaching and learning
- Political perspective: illustrates how the interests of various groups are negotiated and conflicts resolved during the design and implementation of a reform

Each perspective focuses on a series of constructs logically related which help explain aspects of the change process. Some practices may be usefully analyzed through more than one perspective. For example, the transformation of work, as a result of the use of technology and artificial intelligence, creates new cognitive demands, and demands in information literacy and computational thinking, among entrants in the labor market. This shift can be understood as a cultural shift, as an example of changes in the external environment that induce changes in what is expected of schools, but it is also as a political shift, particularly if the new demands of employers translate into organized efforts to influence the curriculum.

These five perspectives bear a relationship with other conceptualizations of organizational change. Organizational theorists Lee Bolman and Terry Deal, for example, argued that much of the scholarship on organizations could be categorized in four perspectives: structural, human resources, political and symbolic (Bolman and Deal 1991). The structural frame corresponds to what I have termed an institutional perspective, human resources to a professional perspective, political to the perspective of the same name, and symbolic to a cultural perspective. School effectiveness scholar Jaap Scheerens summarizes the theoretical views on organizational effectiveness in his conceptualization of school effectiveness as: economic rationality, organic systems model, human relations approach, bureaucracy and political (Scheerens 2000, pp. 23–26). There is correspondence between the organic systems model, which emphasizes adaptation of school systems to their external environment, and what I call a cultural perspective; between the human relations approach

and what I call a professional perspective, between the bureaucratic perspective and what I call an institutional perspective, and between the political perspective which I call also political. Scheeren's emphasis for each of these models differs from mine and his conceptualization lacks a psychological perspective. Professor David Olson has also contrasted institutional and psychological perspectives to study education reform arguing that it is the lack of attention to the institutional dimensions of schooling that explains the failure of many efforts to incorporate ideas from psychology into schooling (Olson 2003).

1.3.1 A Cultural Perspective on Educational Change

A cultural perspective emphasizes that educational practice is the result of shared norms, artifacts and practices which define how education is broadly understood in a society and the expectations society places on schools. This includes several interrelated domains: how educational institutions are understood to relate to other social institutions, and to social purposes and values; how society sees teachers and learners; and how instruction is understood to take place.

Schools share their role in socializing the young with other institutions such as families, religious institutions, civic organizations. Every society has expectations about what role schools should play, about the appropriate actions and boundaries for the instructional sphere and what is outside those boundaries. The key questions from this perspective are: What is the appropriate division of roles among those institutions and others in socializing the young? What social purposes and values are schools expected to advance? Are schools expected to conserve tradition or to foster change? Are they expected to reproduce the social structure or to alter it? Are they expected to prepare people to meet the demands of the existing economic structures, or to enable the creation of different economic structures? Are they expected to prepare people for roles as citizens, and if so, how are those roles understood? How are schools to change given changes in the sciences, technology and arts? These questions, stemming from the first of the three aspects of the cultural perspective on educational change, correspond to the adaptive function of schools, to how they meet societal demands for them.

Societies vary and experience periodic contention regarding these questions, especially regarding the role of schools in the development of values among students, with somewhat less contention with respect to the role of schools helping students gain knowledge and skills. But even with respect to skills, there are at least two contending camps. There are those who emphasize the value of a 'back to basics' focus on the core literacies, and those who favor a focus on a broader range of goals. As the goals of curriculum broaden, as is the case with all the reforms examined in this book, this expansion activates discussions about what is the appropriate role for schools, and what should be off limits to a public institution as it encroaches on the private domains of families or religious groups.

A core aspect of the cultural perspective on education is understanding the expected balance between the conserving and transforming role of schools. Schools balance a set of conservative norms, passing on to the young elements of culture each generation agrees should be transmitted, as well as a set of transformative norms, passing on to the young a certain dissatisfaction with the present, and the desire to imagine and eventually build a new set of norms. From this latter viewpoint, schools are spaces that can anticipate a better society in the future, not just transmitting the social institutions of the present. Societies differ in the balance they expect their schools to achieve between conserving tradition and transforming society, and a cultural perspective in reforming education is about understanding those cultural expectations and boundaries, and aligning education reforms to them. One of the earliest efforts to change the expectations about how schools should interact with social inequality was New Zealand's reform to advance equal educational opportunities to students from different social backgrounds during the 1940s, under the leadership of prime minister Peter Fraser, a former minister of education, and of Clarence Beeby as director of education (Renwick 1998). Similar goals for reform were adopted in the 1960s in the United States and in other nations around the world. The report Philip Coombs produced, and the subsequent Faure report, mentioned earlier, reflect precisely those kinds of shifts in societal expectations for education systems in order for them to keep up with the nature and speed of social, economic and technological change. Questions about this balance between reproduction and change are paramount at a time of rapid technological and social change. For example, increasing concerns about the environment and climate change are likely to generate new demands on schools, so is the development of artificial intelligence and supercomputing and the transformations they are likely to bring to social and economic organization.

The Polish and Russian reforms examined in this book are clear examples of reforms motivated by sweeping political changes, as those societies became more democratic and the accompanying expectations about the role schools should play also changed. The reforms in Portugal followed the considerable expansion in access resulting from the democratization of the country, and debates about quality reflected the increased participation and diversity of views that an increasingly democratic politics made possible. The Mexican education reform is also illustrative of this kind of adaptive response to larger political change, in this case an ongoing process of construction of democratic institutions initiated with the political transition in 2000, which brought with it a challenge to the capture of state institutions such as the education system by political institutions such as parties and unions.

A second aspect of a culture of education concerns how societies view teachers and teaching. Singapore's reverence for its teachers is well documented, in contrast to contexts where teacher appointments are governed by patronage and corruption. Finland's reform demonstrates a heightened appreciation for teachers, in that the reform is done 'with' them and not 'to them'. The Mexican reform, in contrast, a top down administrative reform, demonstrates less openness to teachers as actors in the design of the reform, although paradoxically it attempted to elevate teachers

professionalism by eliminating patronage and corruption in access to and progress in the profession.

Also included in a cultural perspective on educational change is the notion that there is a culture of education, a set of shared norms and practices that define how education is understood by a society, meanings about how instruction should be conducted. This includes ideas about how teacher- or student-centered instruction should be, time dedicated to lectures or group work, and whether teachers should collaborate with their peers or work independently. This culture of education is resilient, once crystalized into norms, artifacts and practices it changes slowly. The efforts to transform education discussed in this book are, in effect, efforts to transform the culture of education, but such change does not happen overnight. The new knowledge and ideas that teachers gain as a result of professional development, the new practices they are induced to enact through new curriculum, and new forms of student or teacher assessment all have to be negotiated with pre-existing culture and norms. In a seminal study of the history of education reform in the United States, Tyack and Cuban argue that federal government policies arrive to schools as mandates which are layered on top of previous mandates, and that successive reform efforts form 'geological layers' in observable instructional practices in schools (Tyack and Cuban 1995, p. 76).

A cultural perspective also underscores the need for relatively long cycles of reform. Because every reform attempts to shape the culture of education, negotiating the existing 'geological layers' of previous reforms, it is necessary for the reform to stay the course until policy intentions find their way to instructional practices, and stay there long enough to become the new norms and shared meanings of how instruction is done. This process of learning new meanings and practices while 'unlearning' pre-existing practices takes time, as it unfolds in the minds of individuals and in the negotiated social interactions among different individuals in school settings. Interrupting a reform before it has had a chance to crystalize into a system of new practices will not only result in little change, it will undermine openness to further change in the future.

The chapter examining reform efforts in Japan underscores the importance of long policy cycles, and the chapter in Finland exemplifies how a reform can build on top of previous policy cycles. In contrast, the chapters examining Brazil and Mexico's reforms illustrate the challenges of relatively short policy cycles, interrupted by a highly politicized context in which the education system is used to serve extra-educational political purposes.

1.3.2 A Psychological Perspective on Educational Change

A psychological perspective highlights the process of teaching and learning for students and for teachers and others supporting instruction, emphasizing scientifically based knowledge about how people learn. The core questions from a psychological point of view are: What should students learn?, In what sequence?, How can they be

supported in learning it?, What and how should teachers teach?, and how they can be supported in professional development so they can teach effectively?

Since the early stages in the development of psychology as an independent science, many have argued that the scientific study of human functioning and development could help improve education. One of the early proponents of that thesis was Swiss psychologist Edouard Claparede, who proposed an experimental approach to education and created an institute to develop a science of education, the Rousseau Institute. The first directors, Pierre Bovet and his successor Jean Piaget, co-founded in 1925, with Claparede, the International Bureau of Education, the first center of comparative education research. Once UNESCO was created, the IBE became part of the organization, serving as the entity that would translate educational scientific knowledge into programs and practices that the organization would incorporate in its efforts to support educational development around the world.

While it would seem evident that scientific knowledge about how learning and instruction take place is necessary for a reform to be ultimately effective in helping students develop the intended competencies, and that operational definitions and measurements of the desired competencies could help inform curriculum and pedagogy, the history of the relationship between psychology and education is a fractured one. David Olson, in examining such relationship, argues that it is insufficient attention to the institutional nature of schools from psychologists that accounts for the fissure:

> A too sharp distinction between persons and institutions makes much good science irrelevant to the understanding of schooling, whereas conflating the two hides the effects of the schooling from our view, reducing it to just one more factor in personal and social development. (Olson 2003, xi)

The choice of which competencies should be included in the curriculum standards straddles the cultural perspective and the psychological perspective in that choosing which competencies to cultivate reflects normative choices resulting from cultural understandings about what is necessary, as well as psychological knowledge about what is possible and helpful to individuals. An example of how psychology can characterize different educational objectives are Benjamin Bloom's taxonomies for knowledge-based, skills-based and affective educational goals. Bloom, an educational psychologist, argued that such goals could be construed as hierarchies reflecting increasing level of cognitive functioning. Knowledge, for example, encompasses knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom 1956).

The various levels of assessment of student knowledge and skills reflected in the PISA assessments of literacy, mathematics and science, reflect also a hierarchy of cognitive functioning. In the 1980s, Howard Gardner proposed a theory of multiple intelligences suggesting that human potential could be characterized along eight domains, and not as the more restricted domain which intelligence tests measured: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal and naturalist (Gardner 1983).

The DeSeCo project engaged an expert group drawing on the contributions of psychology to our understanding of competencies, knowledge and skills. The synthesis developed by Pellegrino and Hilton (2012), presented below, is essentially a summary of psychological research.

1. **Cognitive Skills**

   1.1 Processing and cognitive strategies

   - Critical Thinking
   - Problem Solving
   - Analysis
   - Logical Reasoning
   - Interpretation
   - Decision Making
   - Executive Functioning

   1.2 Knowledge

   - Literacy and communication skills
   - Active listening skills
   - Knowledge of the disciplines
   - Ability to use evidence and assess biases in information
   - Digital Literacy

   1.3 Creativity

   - Creativity
   - Innovation

2. **Interpersonal Skills**

   2.1 Collaborative group skills

   - Communication
   - Collaboration
   - Team Work
   - Cooperation
   - Coordination
   - Empathy, Perspective Taking
   - Trust
   - Service Orientation
   - Conflict Resolution
   - Negotiation

   2.2 Leadership

   - Leadership
   - Responsibility
   - Assertive Communication
   - Self-Presentation
   - Social Influence

3. **Intra-personal Skills**

3.1 Intellectual openness

- Flexibility
- Adaptability
- Artistic and Cultural Appreciation
- Personal and Social Responsibility
- Intercultural competency
- Appreciation for diversity
- Adaptability
- Capacity for lifelong learning
- Intellectual interest and curiosity

3.2 Work ethic/responsibility

- Initiative
- Self-direction
- Responsibility
- Perseverance
- Productivity
- Persistence
- Self-Regulation
- Meta-cognitive skills, anticipate future, reflexive skills
- Professionalism
- Ethics
- Integrity
- Citizenship
- Work Orientation

3.3 Self-efficacy

- Self-regulation (self-monitoring and self-assessment)
- Physical and mental health

In addition to illuminating which competencies should be developed in schools, a psychological perspective also sheds light on the process through which teachers can help students gain such competencies. This is the role of a theory of learning and of an associated theory of teaching. Findings from cognitive science related to learning can help inform how to structure instruction so it is most effective. An example of the relevance of cognitive science to educators is provided in this recent synthesis structured around six key questions about learning (Deans for Impact 2015):

1. How do students understand new ideas?
   (a) Students learn new ideas by reference to ideas they already know.
   (b) To learn students must transfer information from working memory to long term memory. Students have limited memory capacities that can be overwhelmed by tasks that are cognitively too demanding. Understanding new ideas can be impeded if students are confronted with too much information at once.

(c) Cognitive development does not progress through a fixed sequence of age-related stages. The mastery of new concepts happens in fits and starts.

2. How do students learn and retain new information?
   (a) Information is often withdrawn from memory just at it went in. We usually want students to remember what information means and why it is important, so they should think about meaning when they encounter to-be-remembered material.
   (b) Practice is essential to learning new facts, but not all practice is equivalent.
3. How do students solve problems?
   (a) Each subject area has some sets of facts that, if committed to long-term memory, aids problem-solving by freeing working memory resources and illuminating contexts in which existing knowledge and skills can be applied. The size and content of this set varies by subject matter.
   (b) Effective feedback is often essential to acquiring new knowledge and skills.
4. How does learning transfer to new situations in or outside of classrooms?
   (a) The transfer of knowledge or skills to a novel problem requires both knowledge of the problem's context and a deep understanding of the problem's underlying structure.
   (b) We understand new ideas via examples, but its often hard to see the unifying underlying concepts in different examples.
5. What motivates students to learn?
   (a) Beliefs about intelligence are important predictors of student behavior in school.
   (b) Self-determined motivation (a consequence of values or pure interest) leads to better long-term outcomes than controlled motivation (a consequence or reward/punishment or perceptions of self-worth)
   (c) The ability to monitor their own thinking can help students identify what they do and do not know, but people are often unable to accurately judge their own learning and understanding.
   (d) Students will be more motivated and successful in academic environments when they believe that they belong and are accepted in those environments.
6. What are common misconceptions about how students think and learn?
   (a) Students do not have different 'learning styles'.
   (b) Humans do not use only 10% of their brains.
   (c) People are not preferentially 'right-brained' or 'left-brained' in the use of their brains.
   (d) Novices and experts cannot think in all the same ways.
   (e) Cognitive development does not progress via a fixed progression of age-related stages. (Deans for Impact 2015)

How did the various reforms we studied operationalize the competencies necessary for civic and economic participation in the twenty-first century and what provisions did they make to help teachers gain the capacities to develop such competencies among students? While all the cases examined in this book reflect an expansion of the goals of the curriculum, the different countries differ in terms of the specific capacities which are included in the new standards and curriculum frameworks and in how the reforms incorporated existing research in this domain. For example, the reforms in Finland and Mexico reflect the most ambitious expansion of curricular goals, in line with contemporary work on key competencies or twenty-first century skills. The reforms in Poland and Russia reflect an emphasis on higher order cognitive skills. The reform in Portugal illustrates a 'back to basics' approach, ensuring that students learn the basic literacies. The reform in Japan reflects an emphasis on

higher order skills with some attention to socio-emotional skills. The reform in Brazil reflects an emphasis on higher order skills with a layer of cross-cutting competencies added in the latest stages of the reform. The Peruvian reform relied on a competency-based curriculum which emphasized higher order thinking, self-management and social skills. Among the reforms examined in this book, Finland, Mexico, and Peru most clearly appear to draw on psychological theory to define which competencies should be the focus of the new curriculum.

In most cases international organizations, such as UNESCO and the OECD, through projects such as DeSeCo, which defined those competencies, or PISA which assessed student knowledge and skills, played a role in focusing the conversation on student learning outcomes, and in inducing an examination of education standards. For example, the Finnish and Japanese reforms relied on OECD's work through the DeSeCo project and PISA to broaden the goals of the curriculum. Brazil, Mexico, Poland, Portugal and Russia also utilized the results of PISA to motivate the need for higher education standards.

Finland used a very thoughtful process of curriculum revision which began with a clear analysis of transversal competencies which were integrated into subjects, as well as in establishing a dedicated space for project-based curriculum. In this process of curriculum revision they followed a very collaborative and participatory process, incorporating expert knowledge from international organizations such as the DeSeCo project, as well as knowledge generated by the research and evaluation department of the Ministry of Education and by schools of education in their Universities. In spite of the thoughtful process, there were challenges in integrating transversal competencies into teaching in Finland, which underscores the complexity of the task. The same was true in Japan.

Mexico also developed very comprehensive curriculum goals relying on recent international knowledge such as the synthesis by Pellegrino and Hilton (2012), but did so relatively late in the timeline of the reform and with less professional participation of experts and teachers than Finland, which limited the opportunities to build teacher support and to help build teacher capacity.

In contrast, other countries, such as Brazil, seem to have evolved their definition of curriculum standards from higher order cognitive skills to subsequently adding a series of transversal competencies, with no visible connection to the best known work in this field and with no apparent grounding in local research and evaluation efforts. Peru also had a clearly laid out set of competencies for each education level, with no evidence of grounding in cognitive science.

In the cases of Japan, Poland, Portugal and Russia it is not apparent that cognitive science was used to inform the definition of the goals of the reforms.

Besides drawing on cognitive science to identify educational objectives, it is surprising that most of the reforms examined in this book do not appear to have explicitly drawn on cognitive science to design the curriculum, pedagogy or teacher education elements of the reform, even though there are clear curricular and pedagogical implications of such knowledge, as explained earlier.

Countries varied in how much attention they devoted to teacher professional development but even in the countries which provided more support, such as Finland

and Peru, it is unclear that cognitive science informed this work. Much of the emphasis of what was done in professional development seems to have focused on communicating the goals and philosophy of the reform, rather than on helping teachers gain the competency to enact pedagogies which could help their students develop the desired competencies. Finland provided much attention to teacher professional development and used pilots to test some of the ideas generated about how to build teacher capacity. They relied on networks of schools as a way to support professional development opportunities for students to gradually gain the competencies for novel pedagogical practices. Peru's strategy included numerous forms of teacher professional development, most of them school-based. In Brazil the strategy to help teachers develop the capacities to teach this expanded range of competencies was severely complicated by the absence of participation from schools of education in the reform process and by the very complex and decentralized nature of educational governance. In Mexico, approaches to teacher professional development focused primarily on communicating the curriculum goals, and took place at the very end of the administration which began the reform. In Poland, professional development focused on communicating curriculum goals, and pedagogical practice was addressed only by the private publishers as part of the process of marketing the new textbooks which had been developed to support the implementation of the new curriculum. In Japan, Portugal and Russia professional development opportunities were seriously absent from the reform strategy.

1.3.3 A Professional Perspective on Educational Change

A professional perspective focuses on structuring the roles of education practitioners so that practice can be informed by expert knowledge, and in turn, this expert knowledge can serve as a driver of change. A basic tenet of the psychological perspective is that the science of learning and teaching can provide knowledge about how best to support instruction. The professional perspective, in contrast, focuses on the structure of roles and institutions which integrate such expert knowledge with practice. There are two ways a professional perspective can be reflected in a reform, the first is that the reform may seek to strengthen education as a profession, the second, it may engage professionals, including teachers, principals, and teacher educators in the design of the reform treating them as subjects rather than objects of the reform (Villegas-Reimers 2003). A reform may strengthen education as a profession through rules about who can teach, under what conditions, with how much autonomy, criteria for teacher professional preparation, accreditation norms for who can prepare teachers, norms to guide the appointment and the support of the development of teacher careers. All those are instruments designed to align professional practice with the deployment of expert-based knowledge.

A professional perspective can lead to norming practice for existing roles, as when focusing attention on the extent to which instruction is guided by expert knowledge, or it may lead to creating new roles that reflect expertise, as when

focusing attention on the need for new professionals such as school counselors or special education teachers.

The key questions from this perspective are, given a new set of curriculum objectives and expected pedagogies: What are the capacities necessary to teach this curriculum? What is the gap between the current level of capacities and the capacities which are necessary? The identification of this gap is then the foundation to create conditions, establish norms and support the professional development necessary to close the gap.

A tenet of this perspective is that it is essential to help teachers develop the professional mindsets and skills that enable them to deal with the many unexpected challenges they will face over their careers. Also important in this perspective is to provide education professionals with the necessary autonomy and voice to practice professionally, including engaging their expertise in the design and implementation of a reform. A subset of those ideas sees schools as learning organizations, which have the adaptive capacities to continuously professionalize teachers and leaders as they address emerging and unanticipated challenges. A school as a learning organization is defined by several characteristics: 1) a shared vision centered on learning of all students, 2) continued learning opportunities for all staff, 3) team learning and collaboration among staff, 4) a culture of inquiry, innovation and exploration, 5) embedded systems for collecting and exchanging knowledge and learning, 6) learning with and from the external environment and 7) modelling and growing learning leadership (Kools and Stoll 2017).

This perspective is reflected in the concept of 'professional capital' developed by Andy Hargreaves and Michael Fullan:

> Good teaching for all learners requires teachers to be highly committed, thoroughly prepared, continuously developed, properly paid, well networked with each other to maximize their own improvement, and able to make effective judgements using all their capabilities and experience. (Hargreaves and Fullan 2012, p. 3)

A professional perspective values not only the expertise and professional knowledge of practitioners, but more generally expert knowledge. Hence research and evaluation are important elements in this view, as are instructional resources developed to reflect expertise.

In this book, the reforms advanced in Mexico and Peru had a clear intent to professionalize teaching, shifting the criteria for teaching appointments and promotion away from obtaining the political support of the teachers union and towards demonstrated merit and competency aligned with professional criteria. Peru also provided financial and professional support to teachers, as part of the most comprehensive set of actions designed to enhance the teaching profession. Mexico also gave a preeminent role in the reform to the National Institute of Educational Evaluation, tasking them with the evaluation of teacher proficiency. While the reforms in Mexico and Peru reflected a professional perspective in that they sought to strengthen the professionalism of teaching, the Finnish reform reflected a professional perspective in that it involved teachers and other experts in the design and implementation of the reform. Finland also depended extensively on evaluation to guide the reform.

Portugal made evaluation and assessment cornerstones of the reform process, creating a National Institute of Educational Evaluation as part of the reform.

To ground a reform in a professional perspective, it is necessary to continually ascertain the level of professionalization of teachers and other educators. An approach to ascertain the level of professionalism of teachers in an education system was offered many decades ago in New Zealand by Clarence Beeby, the education psychologist who lead the reforms to advance equality of educational opportunity in the 1940s.

Beeby argued that an education system is characterized by the level of skill and professionalization of its teachers. Beeby theorized that education systems developed through a series of four stages, and that each stage was defined by the level of professionalism of teachers. The first stage, which he called 'the Dame school', had teachers which were largely untrained and poorly educated. The second stage, which he termed 'Formalism', was characterized by trained, but still ill-educated, teachers. The third stage, which he called 'Transition', featured teachers who were trained and better educated. The fourth stage, called 'Meaning', featured teachers who were well educated and well trained. Stages differed in the characteristics of the institutions of education. In the Dame school stage, education was unorganized, the focus was on very narrow subject content, with very low standards, as memorization was the main goal. In contrast, in the stage of Meaning, the focus was on meaning and understanding, with a wider curriculum offering more varied content and methods. Additionally, individual differences were recognized, pedagogy relied more on active learning emphasizing problem solving and creativity, and the goals were to develop cognitive skills as well as emotional and aesthetic dispositions (Beeby 1966, p. 72).

Recognizing the level of professionalism of teachers in an education system is helpful for identifying what particular approaches may be necessary to support them. For example, in a context in which teachers have been socialized to see their work primarily as transmitting content in a particular discipline, significant investments in professional development will be necessary for them to be able to lead instruction focused on project-based learning in collaboration with colleagues. Similarly, teachers with serious gaps in content knowledge will need more support to address those gaps than those who have been well prepared in the subjects they are to teach. In addition, in any given system there is likely variation in levels of teacher professionalism, so professional development must be differentiated to respond to such variation.

Understanding the level of professionalism of education in a given system is also helpful from an institutional perspective, which will be discussed later in this chapter. Other structural elements of the 'system' of education should be aligned to the level of professionalization of teachers. For example, greater school autonomy to design curriculum is desirable in schools where teachers are highly qualified, but not in schools where teachers have serious knowledge and skills gaps. Similarly, educational governance matters greatly to the quality and coherence of implementation of reforms. For example, the case of Brazil discussed in this book illustrates how the distributed nature of educational governance and varied capacity among the

national, state and municipal levels of education represented a monumental challenge for the implementation of a standardized national curriculum. In the absence of explicit and significant supports to compensate for such differences in institutional capacity and readiness, this will likely result in very different implementation and results across municipalities.

The reforms examined in this book show very different patterns in their attention to teachers as professionals, arguably because the profession in each case was at different stages. Finland appears to be the system in which teachers were most highly professionalized. Thus, the Finnish approach to advance the expansion of curricular goals relied primarily on a professional perspective. In contrast, Brazil, Poland, Portugal and Russia seem to have done little to align the professionalism of their teachers to the new curriculum objectives. Mexico and Peru advanced a series of actions designed to strengthen teacher professionalism, starting from a context where teaching was not highly professionalized.

1.3.4 An Institutional Perspective on Educational Change

An institutional perspective focuses on the educational structures, norms, regulations, incentives, and organizational design which provide stability and meaning to the work of teaching and learning and to all social interactions designed to support it (Scott 2004, 2008). These structures operate at various nested levels: the classroom in the school, the school in the district, the district in the state, and the state in the nation. The following definition of an education system provided by the Global Partnership for Education illustrates this perspective:

> Collections of institutions, actions and processes that affect the educational status of citizens in the short and long run. Education systems are made up of a large number of actors (teachers, parents, politicians, bureaucrats, civil society organizations) interacting with each other in different institutions (schools, ministry departments) for different reasons (developing curricula, monitoring school performance, managing teachers). All these interactions are governed by rules, beliefs and behavioral norms that affect how actors react and adapt to changes in the system. (Global Partnership for Education 2019, xvii)

Arguably, the institutions of education operate also at a supra-national level, given the various international processes intended to shape education, what I have called the 'global education movement'. Stanford Professor John Meyer, for example, has argued that globalization and world systems and ideas such as human rights and the institutions to advance them have influenced national education systems, principally through curriculum (Meyer 2014). The key focus from this perspective is identifying the key elements and processes which define the system that supports instruction and determining how to achieve internal coherence and alignment among these various elements which constitute a reform. An education 'system' is structured by elements such as curriculum regulations, instructional resources, school structure and buildings, governance, staff, assessments and funding. From this perspective, education is a system, a bureaucracy, where organizational design

and incentives can support the necessary instruction and learning, so it is important that these elements are coherent and well aligned for optimal results. A curriculum fostering breadth of skills will do little to change the instructional core if it is not accompanied by adequate professional development and by student assessment systems which focus on those skills. Several scholars of education reform have argued that the failure of many education reforms is grounded in the inability of education reformers to understand schools as social institutions (Tyack and Tobin 1994; Tyack and Cuban 1995, p. 209; Olson 2003, p. 12).

A recent review of research on education reform in the United States found that instructional reform was more likely to succeed as a 'niche' or sub-system effort, while system-wide reform at scale often failed. The authors conclude that the reforms that succeed in scaling did so because these reforms did not "require deep change in practice and extensive capacity building. They were adopted and implemented rapidly and widely in part because they could work within existing educational organization and culture. The unsuccessful cases of such reform typically did require deeper change in practice and more extensive capacity building, and so could not be scaled up easily or quickly." (Mehta and Cohen 2017, pp. 646–647). The authors of the study identify five characteristics of education reforms which straddle an institutional and a political perspective:

> Our analysis suggests that there are at least five characteristics of successful educational reforms. First, some offered solutions to problems that the people who worked in or around education knew that they had and wanted to solve; they met felt needs for the people who would implement them. Second, some offered solutions that illuminated a real problem that educators had not been aware of, or couldn't figure out how to solve, but they embraced the reform once they saw or believed that it would help; these reforms illuminated a problem of practice and offered a solution. Third, some reforms succeeded because they satisfied demands that arose from the political, economic or social circumstances of schooling; these reforms worked because there was strong popular pressure on and/or in educational organizations or governments to accomplish some educational purpose. Four, in each of these cases, reforms also either offered the educational tools, materials, and practical guidance educators needed to put the reform into practice, or they helped educators to capitalize on existing tools, materials and guidance. Less difficult reforms required less capacity building while more ambitious reforms required more. Fifth, in a locally controlled and democratically governed system of schooling, successful reforms have been roughly consistent with the values of the educators, parents, and students they affected, though this worked differently in system wide than niche versions. (Mehta and Cohen 2017, p. 646)

The studies of 'best practices' or 'high performing systems' typically reflect this institutional perspective, focusing on practices, processes, structures and norms which can help students perform at high levels. For example, an OECD report drawing lessons for the United States from countries where students performed at high levels in PISA identified the following characteristics of high performing systems:

1. A commitment to education and a belief that all students can achieve at high levels.
2. Ambitious, focused and coherent education standards driving the system, aligned with instructional systems.
3. Supporting capacity in schools.

4. A work organization in which teachers can use their potential in terms of how the system is managed, accountability and knowledge management.
5. Institutionalizing improved instructional practice.
6. Aligning incentive structures and engaging stakeholders.
7. Complementing external accountability approaches with internal accountability to colleagues and parents.
8. Investing resources where they have the greatest impact.
9. Balancing local responsibility with capable central offices with the authority and legitimacy to act.
10. Workplace training to support school to work transitions.
11. Coherence of policies and practices, aligning policies across all elements of the system and ensuring coherence of policies over sustained periods of time.
12. Ensuring openness of the system to the external environment to support continuous improvement (OECD 2011).

The Grattan Institute, a public policy think tank in Australia, produced a report identifying the following common characteristics of high performing systems in East Asia:

1. High equity
2. Effective learning and teaching
3. Connecting policy to classroom learning
4. Focus on best practices
5. Emphasis on induction and mentoring
6. Developing teacher groups for research and classroom observation.
7. Have career structures for teachers (Jensen 2012).

Similarly, the National Conference of State Legislatures in the United States, drawing on this comparative study of high-performing education systems, developed a seven-step protocol to build a world-class education system: build an inclusive team and set priorities, study and learn from top performers, create a shared statewide vision, benchmark policies, get started on one piece, work through "messiness," and invest the time (National Council of State Legislatures 2016). The report identified four elements of a world-class education system:

- Children come to school ready to learn, and extra support is given to struggling students so that all have the opportunity to achieve high standards.
- A world-class teaching profession supports a world-class instructional system, where every student has access to highly effective teachers and is expected to succeed.
- A highly effective, intellectually rigorous system of career and technical education is available to those preferring an applied education.
- Individual reforms are connected and aligned as parts of a clearly planned and carefully designed comprehensive system." (National Council of State Legislatures 2016, p. 10).

Similarly, the National Center on Education and the Economy in the United States synthesized nine building blocks for world-class education systems, drawing on a comparative study of high-performing education systems (National Council of State Legislatures 2016):

1. Provide strong support for children and their families before students arrive at school
2. Provide more resources for at-risk students than for others
3. Develop world-class, highly coherent instructional systems
4. Create clear gateways for students through the system, set to global standards, with no dead ends
5. Assure an abundant supply of highly qualified teachers
6. Redesign schools to be places in which teachers will be treated as professionals, with incentives and support to continuously improve their professional practice and the performance of their students
7. Create an effective system of career and technical education and training
8. Create a leadership development system that develops leaders at all levels to manage such systems effectively
9. Institute a governance system that has the authority and legitimacy to develop coherent, powerful policies and is capable of implementing them at scale (National Council of State Legislatures 2016, pp. 7–13).

Education specialists at the World Bank have developed a conceptual framework to facilitate cross-national education comparisons and benchmarking: the Systems Approach for Better Education Results (SABER). The framework documents policies and practices with respect to four quality and system support domains: student assessment, teachers, information and communication technologies and school health and school feeding; and in four governance and finance areas: school finance, school autonomy and accountability, education and management information systems and engaging the private sector (World Bank 2019).

All the reforms examined in this book addressed the following elements of the 'system' which undergirds educational culture and practice, albeit to varied extents: teacher professional development, student and school assessments and school autonomy. Additionally, all of these reforms recognize the importance of some level of local curricular adaptation and development, and given this requires skills which may not be available in schools, the need for school-level support.

The variation across reforms in attention to teacher professional development has already been mentioned. It is noticeable in particular how little attention initial teacher education received in any of the reforms. Some of these reforms used textbooks and instructional materials strategically to influence the instructional core. This was very clearly the case in Mexico, Peru, Poland, Portugal and Japan, but not in Brazil, Finland or Russia.

Many of these reforms used textbooks and instructional resources documenting the new curriculum as strategic resources to support instruction aligned with the new curriculum. Poland distributed booklets with the new curriculum and opened to private publishers the opportunity to design new textbooks. Peru offered

technology-based supports to implement the new secondary curriculum. Mexico provided teachers with books containing the new curriculum. Japan also used instructional resources to support the expanded goals of the curriculum. Brazil produced new textbooks aligned with the federally design component of the curriculum. Portugal changed the rules to approve textbooks and sought greater alignment between those and the new curriculum. Russia did not use instructional resources as a strategy to support the new curriculum.

All of these reforms depended on evaluation systems to motivate and guide new instructional practices. While countries similarly used test results to document low levels of achievement and educational disparities, they differed in the extent to which they also deployed evidence-based knowledge to develop curriculum, professional development programs and other supports to transform instructional practice. Finland stands out as an exemplar for how it utilized the national evaluation center and cross-national assessments, such as PISA, to guide the reform. Student assessments also motivated reform, and in some cases sustained them, in Brazil, Japan, Mexico, Peru, Poland, Portugal and Russia. However, the reliance on assessment systems by all these reforms created tension between the more ambitious objectives of the curriculum and the narrower focus of the assessment systems. Russia and Poland introduced high-stakes national exams that made the curriculum changes secondary in the eyes of teachers and principals.

Mexico was arguably the most ambitious structural reform of the institutions of education, embedded in a set of larger structural reforms, which included changes to the constitutional text and legal framework. The Polish reform also depended greatly on the creation of new structures - the lower secondary schools - to support instructional change. The Peruvian reform was also clearly a comprehensive reform of institutions of the education system. Other reforms, such as Finland, created new structures, such as a new course or space in the curriculum, that would allow students to work on projects where they could integrate knowledge from various disciplines.

1.3.5 A Political Perspective on Educational Change

A political perspective recognizes that education affects the interests of many different groups, and that those interests vary within and across groups, and may be in conflict. As examples of variation within groups, students and parents are key stakeholders of the education system, the presumed beneficiaries of education, but not all students or parents have the same interests with respect to a reform. For example, the parents of students with disabilities might value reforms that promote inclusive education more than those who don't have the same needs, the parents of children who speak indigenous languages may value policies of bilingual education differently than the parents of children who speak the dominant language, the parents of low income children may value compensatory education policies differently than more socioeconomically advantaged parents. Interests may also vary among groups.

For example, teachers' interests in education may not fully coincide with those of students. The same is true of teacher organizations, politicians, and business groups that provide services to schools or hire school graduates. Pivotal in a political perspective of education is how education politics relate to national politics. Education organizations vary in the degree to which they are coupled to national political parties and politics.

Whereas institutional and professional perspectives either assume congruence among the interests of various stakeholders of education reform or prioritize the interests of one group of stakeholders over others, a political perspective recognizes the potential for conflicting interests among stakeholders and sees reform as a way to resolve those conflicts. The key questions in this perspective are: How to ascertain the position of various stakeholder groups with respect to a reform? How to move all stakeholders to be more supportive of the reform, while demobilizing those groups who oppose it?

Some argue that political interests are so powerful in shaping educational institutions and practice, that they can override the educational interests of students. Based on a study of the academic achievement of 60,000 students from low income families in 1015 private and public schools in the United States, and on a series of case studies of turnaround schools, Chubb and Moe argue that public education does not serve disadvantaged groups, that overall public schools fail to provide students opportunities to develop the competencies the economy demands, and that private schools exhibit superior performance because they are accountable to parents (Chubb and Moe 1990).

A recent World Bank report on education argues that it is often politics which explains the lack of alignment between the key elements in an education system, and that a successful reform strategy requires mobilizing stakeholders so that they support the alignment of those elements with learning. The report explains that the key stakeholders with influence over learners, teachers, school inputs and management who often pull the system away from learning include politicians, civil society organizations, peers and communities, the judiciary, the private sector, bureaucrats, international actors and other actors. In order to make the system work for learning, these actors need to be aligned (World Bank 2018, p. 21):

> But education systems can have other goals than can hamper efforts to improve learning. For example, politicians sometimes view education systems as a tool for rewarding their supporters with civil service jobs, or for impressing voters with school construction programs that are visible but not strategically planned. These goals can be misaligned with learning, leaving schools with building they cannot use and teachers who are not proficient. Where these goals compete with other goals, the result is that the overall education system and its actors are not aligned toward learning. (World Bank 2018, p. 175)

All of the reforms studied in this book were embedded in a political context which provided impetus for the reform, none of them were simply the result of incremental improvement in the system. In some cases, these reforms followed political transitions (Poland, Portugal and Russia) or a larger political agenda of an incumbent government (Mexico). In others, they reflected growing participation of civil society in education (Brazil). The emergence of conflicting interests as a challenge for the reform was most salient in Brazil, Mexico and Poland. In Peru

reformers intentionally sought to create political support for the reform by identifying and aligning the interests of various powerful stakeholder groups. For instance the teachers union's support was obtained with the various programs of teacher incentives and a communication strategy which emphasized that teachers were partners in the reform.

1.4 Developing a Reform Strategy and a Sequence

As mentioned, these five perspectives are complementary, rather than mutually exclusive. The process of educational change can be more fully understood through a multidimensional view that takes these five perspectives into account. For instance, the definition of the standards of the curriculum is a process that straddles a cultural and psychological perspective. All standards have a clear normative orientation, reflecting cultural understandings of what schools should teach. They can also be based on a theory of student development, learning and teaching. The various taxonomies of competencies and learning outcomes discussed in this chapter have not just psychological but also epistemological meaning, because psychology alone cannot answer the question of the structure of school knowledge. In turn, embedding expert knowledge about how students learn into standards and norms that guide professional practice is the purview of a professional perspective. Creating the systemic conditions that coherently support professional practice is the domain of an institutional perspective. And finally, building the necessary support for the standards, instruction, professional practice and institutional conditions requires aligning political interests and stakeholders.

The cases examined in this book illustrate that each reform reflects reliance on some of these five perspectives more than on others. An institutional perspective dominates across all reforms, as they embrace the idea of a 'system' and focus on key elements of the system. A political perspective is also apparent in how these reforms responded to political negotiations and changes in each context. The least visible frameworks in the design of these reform strategies are cultural, psychological and professional. This reflects both the situational nature of each reform, as well as the predilections, approaches and blind spots of those leading them. For example, the Mexican reform is clearly an institutional and political reform. It emphasizes changing structures, in part as a way to change political relationships and shift power over the governance of education from the teachers union to the national government. The reform is embedded in a set of other larger structural reforms designed to modernize the Mexican state and increase economic competitiveness. It is for this reason that the reform begins with legal changes that transform the rules of teacher selection and promotion, and that efforts to develop the professional skills of teachers appear much later in the process. The Brazilian and Polish reforms are also institutional and political, as they create new structures and curriculum. In Brazil the reform is supported by civil society groups advocating for educational change. Whereas in Poland, the reforms are supported by an overarching process of

political and economic liberalization, as well as support from teachers, school leaders, and local governments. Significant political changes since did not alter the trajectory of the reform until elections in 2015.

The reforms in Peru, Portugal and Russia are clearly institutional, as they focus on changing norms, structures and processes to influence instruction. In contrast, the Finnish reform is a decidedly professional reform, focusing exclusively on curriculum and on engaging and enhancing the expert knowledge and skills of educators. There are no structural changes in the reform, and there appear to be no political conflicts generated by the reform.

Each of these reforms takes place in a unique context, and it would not be appropriate to expect that using similar approaches would produce the same results in different contexts. For instance, there were clear structural challenges in Mexico, where the teachers union had the power to sell teacher positions and influence promotions in ways that were better aligned with serving the political interests of the union than the educational interests of students or the professional interests of teachers. In that context, it is understandable that an institutional perspective was an essential first step to establish the foundation on which other reforms could subsequently build. Finland did not face similar challenges and instead the reform took place in a context in which the teaching force was substantially professionalized. In such a setting, a professional perspective is fitting. Portugal implemented ambitious goals, such as expanding compulsory education by three years in a context of financial exigency, so it is understandable that they chose to adopt a 'back to basics' approach and concentrate on basic literacies and providing extra support to struggling students.

In the long cycle of policy implementation necessary for deep educational change to transform the culture of education, it is to be expected that strategy would prioritize different dimensions at different stages of a reform. The first order of business in any reform should address the elements highlighted in a cultural perspective, producing some consensus on what it is that schools are expected to do. This social consensus creates the space within which the reform is to operate. There are interesting variations in how the reforms studied in this book addressed this question of fit between the education system and broad societal expectations. Brazil's case stands out as a reform that began with the mobilization of groups of civil society to demand a new curriculum. This coalition provided the space and continuity for the reform to continue across various different government administrations. Portugal, also, is a context in which public debate and growing mobilization successfully placed the topic of quality on the education agenda.

Japan, in contrast, reflects a long cycle of policy reform with much continuity across various administrations as a result of consensus of political elites. Finland's reform illustrates a reform which builds on previous cycles of improvement. Poland and Russia exemplify fairly long cycles of policy change, but also substantial discontinuity and disruption because of political volatility. Mexico's reform is initiated as a result of a political pact designed to produce a shift in educational governance.

Initial conditions clearly influence the strategy adopted in each case. In Mexico, the priority is to create minimum norms to professionalize teaching, with attention

to curriculum later and to professional development much later. In contrast, in Finland, the new curriculum is the first order of business, with attention to professional development almost immediate. In Poland, Portugal and Russia, the priority is to modernize the education system, attending first to governance structures. In Poland, the change of the structure and the reform of the curriculum were implemented simultaneously with the new structure of local administration of schools.

Another way in which initial conditions influenced the strategy chosen by governments concerns the level of professionalism of teachers, as mentioned earlier, and of performance of the system. Finland and Japan were recognized as high performing systems when they began their reform, whereas Brazil, Mexico, Peru. Poland, Portugal and Russia were not.

The reforms in this book do not appear to have designed a clear sequential strategy to guide the process of change at the outset. Instead, they appear to have hoped for continuity and longevity, rather than planned it.

In summary, over the last two decades governments around the world have embarked on ambitious efforts to transform public education. They have done so to better prepare students to meet the demands of the present, and of the future, in a world that is changing rapidly and where the future is increasingly uncertain. These reforms have drawn on ideas about an expanded range of competencies, as well as how they are to be developed over time. International organizations such as UNESCO and the OECD have played an important role in stimulating reform through the dissemination of global policy frameworks such as the Delors report and collaborations such as the DeSeCo project. The results of the PISA assessment have played an important role in focusing the attention of governments on student knowledge and skills in key domains, and in identifying gaps in levels of knowledge across countries and among social groups within countries.

In undertaking these reforms, governments have followed strategies which reflect either a cultural, psychological, professional, institutional or political understanding of the process of change, often depending on more than one perspective, but seldom with a fully multidimensional view of the process. In some ways these reforms have seen the process of change through one eye, sometimes two, but seldom accessing the kaleidoscopic perspective that the five frames discussed in this chapter would have provided.

To fully change the culture of education, long policy cycles are necessary, such as those that have existed in Finland, Japan, Poland and Russia, and may also exist in Brazil and Peru, but probably not in Mexico. The longevity of the reforms studied in this book, however, seems to have been fortuitous, rather than the result of intentional design, and in some cases (Mexico and Portugal) it has been elusive.

The global education movement that was started with the creation of the public school is alive and well, as the world changes, it aims towards more ambitious goals in those wonderful inventions called schools. As it does, the most significant silent revolution experienced by humanity, the creation of an institution that would help us shape the future, continues, sometimes with great success in equipping students with levels of knowledge and skills their forebearers would have only imagined.

References

Adams, J. Q. (1804). *Letters on Silesia. Written during a tour through that country during the years 1800, 1801*. London: Printed for J. Budd at the Crown and Mitre Pall Mall. https://archive.org/details/lettersonsilesi00adamgoog/page/n383. Accessed 3 Dec 2019.

Beeby, C. (1966). *The quality of education in developing countries*. Cambridge, MA: Harvard University Press.

Bloom, B. S. (1956). *Taxonomy of educational objectives*. Boston: Allyn and Bacon.

Bolman, L., & Deal, T. (1991). *Reframing organizations. Artistry, choice and leadership*. Hoboken: Wiley.

Chubb, J., & Moe, T. (1990). *Politics, markets and America's schools*. Washington, DC: Brookings Institutions.

Coombs, P. (1968). *The world educational crisis. A systems analysis*. New York: Oxford University Press.

Deans for Impact. (2015). *The science of learning*. Austin: Deans for Impact.

Delors, J. (1996). *Learning: The treasure within, report to UNESCO of the International Commission on Education for the Twenty-first Century*. Paris: UNESCO.

ECLAC-UNESCO. (1992). *Education and knowledge: Basic pillars of changing production patterns with social equity*. Santiago: United Nations. https://www.cepal.org/en/publications/2144-education-and-knowledge-basic-pillars-changing-production-patterns-social-equity. Accessed 3 Dec 2019.

Elmore, R. (1996). Getting to scale with good educational practice. *Harvard Educational Review, 66*(1), 1–27.

Faure, E., Herrera, F., Kaddoura, A. R., Lopes, H., Petrovsky, A., Rahnema, M., & Ward, F. (1972). *Learning to be: The world of education today and tomorrow*. Paris: UNESCO.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Global Education Partnership. (2019). *Country level evaluations* (Synthesis Report). https://www.globalpartnership.org/sites/default/files/2019-02-gpe-synthesis-report-country-level-evaluations_0.pdf. Accessed 3 Dec 2019.

Hargreaves, A., & Fullan, M. (2012). *Professional capital*. New York: Teachers College Press.

Jensen, B. (2012). *Catching up: Learning from the best school systems in East Asia: Summary report*. Melbourne: Grattan Institute.

Jullien, M. A. (1812). *Esprit de la méthode d'éducation de Pestalozzi, suivie et pratiquée dans l'Institut d'Éducation d'Yverdun, en Suisse*. A. Milan. De L'imprimerie royale. https://archive.org/details/espritdelamthod00jullgoog/page/n6. Accessed 3 Dec 2019.

Jullien, M. A. (1817a). *Esquisse et vues préliminaires d'un ouvrage sur l'éducation comparée, et séries de questions sur l'éducation*. Paris. I: Colas.

Jullien, M. A. (1817b). Letter of Marc Antoine Jullien to Thomas Jeffferson 30 November 1817. https://founders.archives.gov/documents/Jefferson/03-12-02-0181. Accessed 3 Dec 2019.

Jullien, M. A. (1835). Essai général d'éducation physique, morale et intellectuelle. Suivi d'un plan d'éducation pratique pour l'enfance, l'adolescence et la jeunesse, ou recherches sur les principes d'une éducation perfectionnée. Paris. https://archive.org/stream/essaignraldeduca00jull/essaignraldeduca00jull_djvu.txt. Accessed 3 Dec 2019.

Jullien, M. A. (1842). *Exposé de la méthode d'éducation de Pestalozzi, telle qu'elle a été pratiquée sous sa direction pendant dix années de 1806 à 1816 dans l'institut d'Yverdun, en Suisse*. Paris: L. Hachette. Libraire de L'Universite. https://archive.org/details/exposedelamtho00jull/page/n14. Accessed 3 Dec 2019.

Kools, M., & Stoll, L. (2017). *What makes a school a learning organization. OECD. Directorate of Education and Skills* (Education Working Paper No. 137). Paris: OECD.

Mann, H. (1844). *Remarks on the seventh annual report of the Hon. Horace Mann*. Boston: Charles Little and James Brown. https://babel.hathitrust.org/cgi/pt?id=mdp.39015003458208&view=1up&seq=7. Accessed 3 Dec 2019.

Mehta, J., & Cohen, D. (2017). Why reform sometime succeeds: Understanding the conditions that produce reforms that last. *American Educational Research Journal, 54*(4), 644–690.
Meyer, J. (2014). "World Society and the Globalization of Educational Policy" (with F. Ramirez and J. Lerch). In K. Mundy, A. Green, R. Lingard, & A. Verger (Eds.), *Handbook of global policy-making in education*. Chichester: Wiley-Blackwell.
National Conference of State Legislatures. *No time to lose: How to build a world-class education system state by state* (2016).
OECD. (2011). *Strong performers and successful performers in education: Lessons from PISA for the United States*. Paris: OECD.
OECD. (2015). *PISA 2015 results. Excellence and equity in education. Volume 1*. Paris: OECD. https://read.oecd-ilibrary.org/education/pisa-2015-results-volume-i_9789264266490-en#page1. Accessed 3 Dec 2019.
OECD. (2018). *The future of education and skills. Education 2030*. Paris: OECD. https://www.oecd.org/education/2030-project/about/documents/E2030%20Position%20Paper%20(05.04.2018).pdf. Accessed 3 Dec 2019.
OECD. (2019a). *TALIS – The OECD teaching and learning international survey*. http://www.oecd.org/education/talis/. Accessed 3 Dec 2019.
OECD. (2019b). *PISA 2018 results. What students know and can do. Volume 1*. https://www.oecd.org/pisa/. Accessed 6 Dec 2019.
Olson, D. (2003). *Psychological theory and educational reform*. Cambridge: Cambridge University Press.
Pellegrino, J. W., & Hilton, M. L. (Eds.). (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, DC: The National Academies Press.
Reimers, F. (1990). The impact of the debt crisis on education. Implications for educational planning and management. *Prospects, 20*(4), 539–554.
Reimers, F. (2020). *Educating students to improve the world*. Springer.
Reimers, F., & Chung, C. (Eds.). (2016). *Teaching and learning for the twenty first century*. Cambridge: Harvard Education Publishing.
Reimers, F., & Chung, C. (Eds.). (2018). *Preparing teachers to educate whole students: An international comparative study*. Cambridge, MA: Harvard Education Publishing.
Renwick, W. L. (1998). Clarence Beeby. *Prospects, 28*(2), 335–348.
Roser, M., & Ortiz-Ospina, E. (2019). *Primary and secondary education*. https://ourworldindata.org/primary-and-secondary-education#the-rise-of-basic-schooling-over-the-last-2-centuries. Accessed 3 Dec 2019.
Rychen, D. S., & Salganik, L. H. (2001). *Defining and selecting key competencies*. Seattle: Hogrefe and Huber Publishers.
Rychen, D. S., & Salganik, L. H. (2003). *Key competencies for a successful life and a well-functioning society*. Seattle: Hogrefe and Huber Publishers.
Sarmiento, D. F. (1849). *De la Educacion Popular*. Santiago: Imprenta de Julio Belin y Compania.
Scheerens, J. (2000). *Improving school effectiveness*. Paris: UNESCO. International Institute of Education.
Scott, W. R. (2004). Institutional theory. In G. Ritzer (Ed.), *Encyclopedia of social theory* (pp. 408–414). Thousand Oaks: Sage.
Scott, W. R. (2008). *Institutions and organizations: Ideas and interests*. Los Angeles: Sage.
Sims, J., & Romero, J. (2013). *Latin American Debt Crisis of the 1980s. Federal reserve history*. https://www.federalreservehistory.org/essays/latin_american_debt_crisis. Accessed 3 Dec 2019.
Tyack, D., & Cuban, L. (1995). *Tinkering towards Utopia. A Century of public school reform*. Cambridge, MA: Harvard University Press.
Tyack, D., & Tobin, W. (1994). The 'grammar' of schooling: Why has it been so hard to change? *American Educational Research Journal, 31*(3), 452–479.
United Nations. (1948). *Universal declaration of human rights*. New York: United Nations. https://www.un.org/en/universal-declaration-human-rights/. Accessed 3 Dec 2019.

Villegas-Reimers, E. (2003). *Teacher professional development. An international review of the literature*. Paris: UNESCO. International Institute for Educational Planning.
World Bank. (2018). *World development report 2018. Learning to realize education's promise*. Washington, DC: World Bank.
World Bank. (2019). *Systems approach for better education results*. http://saber.worldbank.org/index.cfm. Accessed 3 Dec 2019.

Chapter 2
Curriculum Reform in Brazil to Develop Skills for the Twenty-First Century

Claudia Costin and Teresa Pontual

Abstract This chapter describes a national curricular reform process underway in Brazil. A civil society movement led by education NGOs has had a major role in ensuring the continuity of this reform through political turmoil from 2013 on. The complete *Base Nacional Comum Curricular* (*BNCC*) covering all of Basic Education from early childhood through upper secondary education was approved by the federal government in December 2018. The 600-page document lists the learning objectives, skills and competencies all students in Brazil must achieve. The most ambitious part of the BNCC, however, are the ten general competencies that set the north for all the grades and subject matter specific objectives, skills and competencies. These competencies are firmly aligned with the twenty-first Century skills all students must develop to lead fulfilling and productive lives as global citizens. The theory of change behind the BNCC is to align the main education policies in Brazil's highly decentralized education system to these higher standards: local curricula (state and city levels), classroom materials, student evaluations as well as initial and ongoing teacher training; thereby improving student outcomes. This chapter chronicles this reform effort and gives an overview of where this theory of change currently stands.

2.1 Introduction

Brazil is currently implementing an ambitious national curricular reform. The process began in 2013 with an organized civil society movement that realized the importance of realizing the promise of a national common core which was first laid out in the 1988 Constitution which reestablished Brazil's democratic regime. In December 2017 came the first important milestone when the Minister of Education sanctioned the *Base Nacional Comum Curricular* (*BNCC*) – an extensive set of learning objectives, competencies and skills – for early childhood, primary and

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lower secondary education. A year later the full version, a 600-page document including upper secondary education was sanctioned by the fourth Minister of Education to take office since the BNCC's first version was made public in 2015. The civil society movement started with key actors from the third sector, universities and government, who strongly believed that without a common curricular north to guide all other education policies, such as local curricula, classroom materials, teacher training and student evaluations, Brazil would never overcome its poor educational outcomes and offer its children the chance to break the cycle of poverty through education. This movement, known as *Movimento pela Base*, successfully influenced the federal government to develop the BNCC in a very short period and under the directive of several different education ministers from opposing political parties and ideologies. A third and ideologically distinct political party came to power at the beginning of 2019 with the challenge of leading the implementation of the BNCC at the school level in all 26 states, the federal district and 5570 municipalities. Time will tell how the current president's strong military, religious and conservative influences will affect the BNCC's implementation. His first Minister of Education, was fired after just 3 months. The current Minister, the sixth to command the Ministry since 2015, is an economics professor from the president's inner circle. The Ministry's focus seems to be in early literacy and increasing the number basic education schools run by the military, however they have not abandoned the BNCC implementation strategy started by the previous government.

This chapter will cover the period from 2013 to 2019, through the BNCC's writing process, the final approval of the early childhood, primary, lower and upper secondary education parts of the BNCC, the measures taken by the federal government to aide states and cities in the implementation process, as well as the role of the third sector in each of these moments.

This chapter brings the perspectives of two members of the civil society movement, *Movimento pela Base*, Claudia Costin and Teresa Pontual, who are, respectively, the Director and Executive Manager of the think-and-do-tank Center for Excellence and Innovation in Education Policies (CEIPE) at the *Fundação Getulio Vargas* (FGV), a renowned private university in Brazil. Ms. Pontual was also the Director of Curriculum at the Ministry of Education from September 2016 to August 2017, during which period the Ministry was working on the third version of the BNCC. Our account is based on our experiences as advocates of the BNCC, as well as education policy experts, who have previously held leadership roles at the state and city levels (more information on our backgrounds can be found at the end beginning of the book).

The theory of change behind the BNCC is that the alignment of all other education policies, such as local curricula, teacher training, classroom materials and student evaluations, will promote greater integration, synergies and exchanges among cities and states and lead to better outcomes for children. With a common and clearly defined north provided by the BNCC, states would develop their curricula in partnership with their own cities, the federal government's National Textbook Program (PNLD) would provide textbooks aligned with the BNCC, teacher training programs would have to incorporate the BNCC into their curricula and the Ministry

of Education would align its national external evaluation of student achievement to the skills and competencies laid out by the BNCC. In this chapter we will look at how this theory of change stands as of 2019.

2.2 Context

Brazil has participated in the Programme for International Student Assessment (PISA) since its first application in 2000. Although the country showed great improvement in mathematics from 2003 to 2012 (OECD 2012), it has stagnated since then and has always been among the worst performers. Brazil ranked 64th in mathematics, 62nd in science and 61st in reading among 69 participating countries and economies in the 2015 edition of PISA (OECD, 2015). This is despite being the world's ninth largest economy (IMF 2018) and spending more on education as a percentage of GDP then the OECD members on average (6.2% and 5.2%, respectively, in 2015) (World Bank Data 2015). According to Brazil's own assessment, the Basic Education Evaluation System (SAEB), in 2015, only 43% of students learned what they should have in Math and 55% in Portuguese at the end of fifth grade (Todos pela Educação 2018). These percentages only get worse at the higher stages: 18% in Math and 34% in Portuguese in ninth grade and seven percent in Math and 28% in Portuguese at the last year of high school, when many students have already given up on formal education altogether (Ibid). In 2017, only 59.2% of 19-year-olds had graduated high school (Ibid).

One of the greatest challenges and most commonly cited excuses for poor student performance in Brazil is the country's size. Brazil has the fifth largest population in the world (United Nations 2017), and 48.5 million children enrolled in basic education in 2018, 81% of whom attend public schools (INEP). And if the scale was not challenging enough, the country's 1988 Constitution added many layers of complexity when it distributed the responsibilities for managing the education system across the members of the federation. Brazil's 5570 municipalities are responsible for early childhood exclusively and share with states the responsibility for primary and lower secondary education. The 26 states are responsible for primary and lower secondary education (along with the municipalities) and upper secondary education (exclusively). The federal district, where the country's capital is located, is responsible for all three stages of basic education.[1] The federal government is responsible for tertiary education and should orient and help finance basic education in states, municipalities and the federal district. To add to the complexity, Brazil's 1996

[1] In Brazil, basic education includes three levels: (1) early childhood which encompasses creche (zero to three years of age) and pre-school (4 and 5 year olds), (2) "fundamental" which is divided into early years which encompasses first through fifth grades (six to ten years of age) and late years which encompasses sixth through ninth grades (11–14 years of age), corresponding to primary and lower secondary education and (3) upper secondary which corresponds to the three grades of high school (15–17 years of age).

National Education Law (*Lei de Diretrizes e Bases da Educação* or LDB) grants all 181,900 schools pedagogical autonomy, while simultaneously holding city and state governments responsible for guaranteeing all students the right to quality education (Brazil 1996).

Before the 1996 National Education Law, Brazil was still overcoming the challenge of providing all children with access to primary education. Since then, Brazil has shifted to focus on ensuring all four and 5 year-olds have access to pre-school, as part of compulsory education, improving the quality of primary education, and getting students to enroll in and graduate from high school. We have made strides in all these areas, but not at the desired pace and the greatest one continues to be ensuring quality with equity: getting all students to learn what is expected for their grade level. As the country still struggles with these twentieth century challenges, the twenty-first century challenge of making education truly relevant by broadening the scope of competencies we expect schools to help children develop has added many layers of complexity to the quality challenge.

As we have fallen further behind other countries, including our Latin American neighbor Chile, and have made strides in reducing extreme poverty through conditional cash transfer programs linked to conditionalities such as school attendance, Brazil's third sector has begun looking more and more to education as the key to guaranteeing equal opportunities for all Brazilians regardless of social class, race or ethnicity. One of these, the Lemann Foundation, financed by one of Brazil's wealthiest businessman, Jorge Paulo Lemann, started operating in 2002 and dedicated most of its resources to improving public education. It was the Lemann Foundation who garnered the support of other non-profits, education leaders, university professors and politicians (from the executive and legislative branches) in Brazil to create the *Movimento pela Base*, starting with a seminal trip to Yale University in 2013, where the first members were immersed in lectures about the United States' Common Core, from its initial development to its implementation, including the successes and failures it faced along the way. The members included people associated with all sides of the political spectrum, those who had worked for the leftist Worker's Party (PT), the center-leftist Social Democratic Party (PSDB), as well as the more conservative Democratic Party (DEM) and the centrist Brazilian Democratic Movement (MDB). The members of the movement held a series of meetings to establish the premises upon which they believed Brazil should develop its own common core. The heterogenous nature of the movement made these discussions very challenging, but it is also the most probable reason for the influence and longevity it has enjoyed thus far.

As the trip to Yale University shows, the *Movimento pela Base* welcomed international experiences and expertise to inform its recommendations. National and subnational curriculum reforms that served as inspiration and lessons-learned were especially those undertaken by the United States, Australia, Chile and British Columbia in Canada, and the main institutions that shared their expertise were the UK's Curriculum Foundation, the Australian Curriculum, Assessment and Reporting Authority (ACARA), the US's Center for Curriculum Redesign and the Lemann Center for Educational Entrepreneurship and Innovation in Brazil at the University

of Stanford. These references supported the writers of the BNCC's third version in developing a competency-based curriculum starting from ten core competencies, closely aligned with twenty-first century skills, that would cut-across all the subject matter-based competencies and skills.

The idea of having national curricular guidelines is not a recent one. The 1988 Constitution determined the establishment of "minimum contents" for primary and lower secondary education (Brazil 1988). The 1996 National Education Law determines that basic education should have a "national common base". Paulo Renato Souza, education minister during Fernando Henrique Cardoso's presidency, introduced the National Curricular Parameters (PCNs) in 1997 for primary education (which currently corresponds to second through fifth grades), in 1998 for lower secondary education (fifth through eighth grade)[2] and in 2000 for high school (first through third grade) covering all subject matters.[3] It was a very ambitious undertaking with ten volumes produced for primary, another ten for lower secondary and 4 volumes for upper secondary. The PCNs are widely regarded as high-quality material developed by a team of respected educators. However, aside from the careful construction of the PCNs, the Federal Ministry did not go much further than ensuring the schools had physical copies of the publication. The PCNs were never published as a norm. School systems could incorporate them into their curriculum voluntarily or ignore them just as easily. However, the PCNs construction and existence laid the ground for the advent of the BNCC.

In 2010, the National Education Council approved the National Curricular Directives (or Guidelines), where once again a "national common base" is mentioned, as in the National Education Law (CNE 2010). In 2014, Brazil approved a National Education Plan for 2014–2024 (Brazil 2014). The BNCC is explicitly cited as a strategy for reaching four of the Plan's 20 goals. It goes further than the previous norms when it states that the BNCC needs to define the common learning objectives for all subject matters and each grade of primary and lower secondary education. By then, enough momentum had built to make BNCC a reality.

2.3 The Writing Process

In June 2015, the Ministry of Education began working on the BNCC's first version. At the time, Dilma Rousseff was president and Renato Janine Ribeiro, a renowned Brazilian philosopher and scholar was her education minister. The Ministry created a 116-member commission from universities, schools and specialized institutions chosen in collaboration with the State and City Secretaries of Education. The work

[2] At the time, primary education was 8 years long, in 2006 a law was passed altering the National Education Law to make it 9 years long, starting at 6 years of age. http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2006/Lei/L11274.htm

[3] The PCNs for primary and secondary education are available at the Ministry of Education's website: http://portal.mec.gov.br/

began with a survey of the state and city curricula to find common language and common ground for the development of the BNCC. The first version was published on September 2015. To ensure that as many teachers as possible participated in the process of developing the BNCC, the Ministry of Education placed the first version for public consultation and feedback on a dedicated online platform from September 2015 through March 2016. More than 12 million contributions were registered, half of which came from 45,000 schools. From a total of 300,000 registered users, 207,000 were teachers. At the same time, as it made the first version of the BNCC available for online contributions, the Ministry of Education hired 90 experts to analyze the document and make recommendations. The National University of Brasília (UNB) was also hired to help systematize all these contributions into recommendations for the writers to take into consideration in the second version.[4]

The BNCC's second version was published on May 3rd, 2016 already under a second Minister of Education, who left most of the staff under him unchanged. Days after the publication of the BNCC's second version, on May 12th, 2016, Dilma Rousseff stepped down as President as the Senate decided to open her impeachment proceedings under charges of having committed a fiscal responsibility crime. Her vice-president, Michel Temer took office and nominated Mendonça Filho, a politician from the Democratic Party (DEM) and former governor of the northeastern state of Pernambuco, as Education Minister. Mendonça nominated as his second-in-command a renowned educator and former Secretary of Education for the state of São Paulo, Maria Helena Guimarães de Castro with close associations to the Social Democratic Party (PSDB). This move ensured not only the continuity of the BNCC reform but increased its status. Castro was a member of the *Movimento pela Base* since the seminal trip to Yale. She immediately made BNCC her top priority and built a new governance structure for managing the reform effort, which included a management committee (instituted at the end of July) and a writing committee (MEC 2016). To help manage the writing and publication effort of the third version, the Ministry of Education brought on the Vanzolini Foundation, a private non-profit created and run by engineering professors from the University of São Paulo (USP). All matters related to the BNCC continued as planned and with a renewed sense of urgency, since there was only a little over two and a half years left in this President's mandate.

The public consultation strategy for the second version continued as planned and was targeted at the school systems in cities and states, in partnership with the National Council of State Secretaries of Education (CONSED) and its equivalent at the municipal level, the National Union of Municipal Education Secretaries (UNDIME). The National University of Brasília (UNB) continued to manage this nationwide consultation effort on behalf of the Ministry. From June to August of 2016, all 26 states and the Federal District held seminars with over 9000 participants in total, which included leaders at the system and school levels as well as

[4] The history of the BNCC can be found on the *Movimento pela Base*'s wesite: http://movimentopelabase.org.br/linha-do-tempo/, as well as the initial website used for first and second versions of the BNCC: http://historiadabncc.mec.gov.br/ (last access: March 2019)

teachers. These two-day workshop-style seminars produced contributions that were specific for each learning objective presented in the second version, as well as to the introductory texts, which the UNB compiled and summarized for the Ministry of Education. With their help, CONSED and UNDIME provided their recommendations regarding the BNCC's second version to the Ministry on September 2016.

The writing team immediately started working on the third version of the BNCC based on CONSED and UNDIME's recommendations. One of the biggest concerns was to ensure a sense of continuity among versions in order to maintain popular support for the reform. This was a great challenge given how unpopular Temer's government was from the point of view of most educators, who saw the impeachment as a coup d'etat from conservative forces to oust a left-wing government. For this purpose, the writers produced a document where every single change made between the second and third versions of the BNCC were accounted for and justified based on the feedback received from CONSED and UNDIME.[5] Although there were many differences between the second and third versions, the greatest one by far was the absence of upper secondary education. Whereas the two previous versions had objectives set for all levels of basic education, which in Brazil's case covers early childhood (starting at zero years of age), through primary all the way to upper secondary education (roughly 17 years of age), the third version would only cover early childhood through lower secondary education (roughly 14 years of age). That is because, in September 2016, four short months after becoming president, Temer's government passed a Provisional Measure[6] overhauling the curricular structure of upper secondary education in Brazil and making the previous versions of the BNCC for this education level completely obsolete. Since the Provisional Measure still needed to be voted by Congress, the Education Ministry opted to treat upper secondary education separately and continue working on the BNCC for early childhood, primary and lower secondary education. This was a very controversial decision that received a lot of pushback, especially from the National Education Council (CNE),[7] which still had members nominated by the previous government. The Provisional Measure was approved by Congress in February 2017 and the third version of the BNCC (without the upper secondary education part) was sent to the CNE for deliberation in April 2017.

Version one of the BNCC had received individual feedback through the online platform and was commissioned by the Ministry, version two had received

[5] The document can be reached at this address: http://cnebncc.mec.gov.br/docs/BNCC_Estudo_Comparativo.pdf (accessed on march 2019).

[6] *Medida Provisória*, in Portuguese, is an executive order which has the temporary force of law until it is approved by congress in at most 120 days.

[7] The National Education Council was created by law in 1995, it is composed of 24 members with 4 year mandates that can be renewed once. Two Secretaries of the Ministry of Education are innate members of the CNE. The remainder should be indicated by associations from the education sector and nominated by the Minister of Education. The members need to come from all regions of the country and all areas of the education sector. (Brasil, Presidência da República, Lei 9131 de 1995. http://www.planalto.gov.br/ccivil_03/leis/L9131.htm)

education systems' feedback through the state seminars. At this point, under the leadership of the National Education Council (CNE), version three would receive feedback from entities, such as unions, associations, universities, NGOs and interest groups, through public hearings led by the CNE with the Ministry of Education's resources and political support in each of Brazil's five regions. The hearings took place from June through September 2017, with 1707 participants, of which 283 voiced their positions regarding version three of the BNCC (CNE 2017a, b). Even though all references to gender identity had been removed from the version sent to the CNE at the behest of the government's conservative base, the public hearings were marked by criticism from religious groups against the BNCC's perceived defense of "gender ideology". Extremists from both the 'right' and the 'left' criticized the BNCC, one for not citing gender issues enough, and the other for citing them too much. To postpone the issue, the CNE Resolution that institutes the BNCC determined that the CNE will have to present norms for sexual orientation issues on a separate document. After much negotiation between the Ministry and the CNE's members, the fourth and final version of the BNCC, with changes made especially in the skills and competencies for Portuguese language, was approved with 20 votes in favor and 3 votes against it and sanctioned by the Minister of Education on December 20th, 2017. The final document was published as an attachment to the CNE Resolution, which lays out strategies and establishes deadlines for the BNCC's adoption (CNE 2017a, b). Even before the CNE's approval, in August 2017, CONSED and UNDIME (both members of the CNE) had already partnered with *Movimento pela Base* to create a BNCC implementation guide for cities and states.[8]

The complete version of the BNCC, which included the competencies and skills for upper secondary education was published a year later in December 2018. The final 600-page document has ten general competencies, which are strongly aligned with the DeSeCo project (OECD 2005), as its guiding and inspirational force. All the learning objectives set out for early childhood, the skills and competencies which are defined for Portuguese, Art, Physical Education, English Language (only for lower secondary education), Mathematics, Science, History, Geography and Religion for each grade of primary education and for the areas of Languages, Mathematics, Natural Sciences and Applied Human and Social Sciences for upper secondary education (the only subject matter that has specific competencies and skills laid out is Portuguese) are meant to culminate in the ten general competencies laid out in the introductory chapter of the document.

The early childhood learning objectives are extremely noteworthy as the concept of curriculum was not very widespread in Brazilian day care centers, which, until recently, were seen as part of social protection policy rather than educational centers. The early childhood BNCC makes clear to all education systems the need to have learning objectives in day care centers for month-old babies continuing to preschool. As the research literature has shown the importance of investing in

[8] The implementation guide can be accessed here: http://basenacionalcomum.mec.gov.br/wp-content/uploads/2018/04/guia_BNC_2018_online_v7.pdf

children's first years of development as crucial to their future success (Elango et al. 2015), the BNCC's inclusion of clear learning objectives for early childhood should promote higher quality curriculum, materials and teaching to the first stage of Basic Education.

Another important way in which the BNCC's final version sets higher expectations for Brazilian students is occurred in the skills and competencies in Portuguese language. Where previously Brazilian students were expected to learn to read and write by the end of third grade (around 8 years of age), the BNCC brought this expectation up to the end of second grade (around 7 years of age). This measure meant to place focus on the importance of achieving literacy at most by second grade in order to avoid the accumulation of learning deficits reflected in Brazil's high repetition and grade-age distortion rates.

According to the theory of change, for the BNCC to have its intended impact on the quality of education, cities and states, who are directly responsible for public schools, need to develop curricula aligned to its higher standards and from there develop classroom materials, professional development and student evaluations to ensure the new curriculum is effectively implemented. Although arriving at a BNCC that could be approved by a diverse National Education Council was a challenge, getting this written document to change what goes on in the tens of thousands of schools across Brazil is a much greater one, especially in such a decentralized education system. The Ministry of Education, as well as the *Movimento pela Base*, are currently focused on supporting cities and states' implementation efforts, including the provision of funds for such actions.

2.4 The BNCC and State and City Curricula

Cities and states have vastly different organizational and human capacities to develop and implement a high-quality curriculum. The Ministry of Education has implemented a program, the ProBNCC, with the support of the *Movimento pela Base* to help states and cities build their own curriculum by financing, training and offering technical support to a group of writers nominated by a Committee where the cities are represented. In doing so, the Ministry is guaranteeing that all states have a dedicated writing team to translate the BNCC into a state level curriculum, which might not have been the case otherwise. The ProBNCC is a collaborative effort involving CONSED, UNDIME, the National Forum of Education Councils and the National Union of State Councils of Education (MEC 2018). As of October 2019, all 26 states and the Federal District had their curricula aligned with the BNCC approved by their respective subnational level Education Councils (InfoBNCC#2 2019).

The Ministry's strategy also includes incentives for cities and states to work together on developing curricula. This is crucial to the success of the BNCC since most of Brazil's 5568 municipal departments of education lack the institutional capacity to develop their own high-quality curricula. The high number of municipal

school systems, many of which have less than five schools to manage, generate very heterogeneous conditions and results. In order to improve outcomes for children, the Ministry of Education and the third sector have begun focusing on promoting collaboration between cities and state school systems, with the latter, which usually have greater institutional capacity, taking on a leadership role. The mixed responsibilities the Constitution attributes to both cities and states when it comes to primary and lower secondary education can lead to competition for students and disarticulated policies. It also poses a challenge related to early childhood education, which is outside the states' realm of responsibility. Therefore, State Departments of Education have not built the necessary technical capacity to come to the cities' aid. Few states have been able to develop strong and lasting collaborative relationships with cities that have led to better outcomes for children.

The most renowned example of collaboration between a state and its cities comes from Ceará (Abrucio et al. 2016). A state that stands out for having the best educational outcomes in Brazil's Northeast, its poorest region, and for having the least inequity among its public primary schools when compared to the rest of the country. In Ceará close to 100% of primary and lower secondary schools are administered by the cities' departments of education. On average, in Brazil, cities are responsible for over 80% of public primary and about half of lower secondary enrolments (INEP 2018).Although, until recently, in most cases, states provide did not provide cities with much support for running its schools, in Ceará the State Department of Education dedicates an entire division to cooperation with its cities. This cooperation involves financial resources, technical assistance, classroom materials, teacher training and external student evaluations to all its 184 municipalities. Even before the BNCC, Ceará already had an early childhood and primary education curriculum developed in partnership with the cities.

States like Ceará that had previously established strong partnerships with cities are serving as references to others who understand the importance of this collaboration for improving its own outcomes. Afterall, improving outcomes in upper secondary education, which are exclusively the responsibility of states, is nearly impossible when children fail to learn what they should have in primary and lower secondary schools. Since states have greater financial and human resources than cities, their leadership is essential for decreasing inequalities between cities and guaranteeing equal opportunities for all residents.

Ideally, states, capitals and perhaps the largest cities would develop their own curriculum, the smaller cities would adopt their state's curriculum, and schools would contextualize these curricula through their pedagogical projects. With this level of cooperation, Brazil would have around 60 different curricula as opposed to over 5500, if all school systems decide to develop their own. The first outcome favors BNCC's theory of change, whereby alignment between education policies leads to better outcomes for children.

Besides the issue of state and city cooperation, developing a curriculum aligned with the BNCC faces a more general technical capacity challenge, which stems from the limited number of curriculum experts in the country and their concentration in Brazil's southeast region. The Ministry of Education, the Lemann Foundation,

Movimento pela Base, and *Todos pela Educação*, among others, are creating incentives, programs and partnerships to increase national research and expertise in this area.

2.5 The BNCC and Classroom Materials

Whereas schools are run by cities and states, the textbooks that teachers and students use are chosen from a pre-approved list by schools and provided directly by the federal government, with little participation from departments of education, as part of the National Textbook Program (PNLD), the Ministry of Education's longest running program. In 2017 the Ministry made some significant changes to the program, increasing the level of participation of departments of education, adding a step before the schools' choice when the Secretary of Education can decide that all or subgroups of schools will adopt the same textbook. The textbook they will receive will be democratically chosen by the teachers in the participating group of schools (Brazil 2017).

In a context where textbooks often become the tacit curriculum, influencing their production is crucial to the BNCC's theory of change. As a federal policy, the PNLD is also easily altered by the Ministry. Even before the BNCC's final version was approved by the National Education Council, the Ministry published on July 31st, 2017 a public bid for the textbooks for early childhood and primary education (first through fifth grades) in all subject matters aligned to the BNCC's third version. These textbooks would arrive in schools at the start of the 2019 school year and last for 3 years. This tight production schedule as well as the need to apply any changes made in the BNCC's final version to the textbooks used in the second year of the three-year cycle led to strong pushback from publishers. Despite these complaints, the Ministry's sense of urgency to implement the BNCC prevailed. Another innovation brought to the PNLD 2019 was the inclusion of a textbook introducing project-based learning focused on developing the BNCC's ten core competencies (FNDE 2017).

As important to the BNCC's implementation, as the PNLD is, it also imposes a clear limitation since it does not take into consideration the city and state curricula, bypassing a crucial element of the theory of change. As the PNLD has never been able to answer to regional or local curriculum needs (even before the BNCC), many states and cities (including São Paulo and Ceará) have produced their own classroom materials and sent them to schools to be used on top of or even in lieu of PNLD textbooks. This juxtaposition of efforts has come under the attack of public attorneys who only see the duplicity of public resources, not appreciating that the state and city materials serve the local curriculum and context whereas the national ones cannot fulfill this purpose.

The other limitation the PNLD poses to BNCC implementation is that it delays the arrival of BNCC-aligned textbooks to its own 3-year cycle. As it stands, the early childhood education and primary education BNCC-aligned textbooks would

arrive in schools at the start of the 2019 school year, the ones for lower secondary education would arrive at the start of 2020 and the upper secondary textbooks in 2021. Consequently, even though the local curricula might be aligned to the BNCC starting in 2020, classroom materials will only be aligned for all grades in 2021.

The BNCC reform has made evident the need for changes to the PNLD that would lead to the decentralization of more resources and pedagogical decisions to the departments of education where curriculum decisions are made. However, as the longest standing federal public education program, with an annual budget of over two billion reais (around 521 million dollars), the PNLD is one of the publishing market's main revenue sources and they have built a strong lobby to push back against any changes that might be contrary to their interests.

The BNCC's theory of change presumes that states and cities will develop their curricula in collaboration with one another and for these curricula to affect what is taught in classrooms the textbooks that teachers use to plan their lessons and students take home to study need to be aligned to these curricula, including the local context and other additions they should bring to the BNCC. When the PNLD delivers books that are aligned only to the BNCC, it fails to acknowledge all the resources that states and cities, with the federal government's support, have put into developing their own curricula and leaves cities and states with the responsibility of complementing the PNLD textbooks with additional materials that consider the specificities of their curricula, which they may not have the capacity or means to do.

2.6 The BNCC and Teacher Training

For the BNCC to have its desired impact on student outcomes, the skills and competencies it lays out need to be incorporated into the curricula of initial teacher training programs, so that all future teachers feel prepared to help develop them in their students. Temer's government took advantage of the Upper Secondary Education Reform to amend the National Education Law to mandate that the BNCC be incorporated into initial teacher training curricula within 2 years of its approval (LDB, article 62). Although this change to the law sends a strong message, the Ministry of Education has few enforcement mechanisms. Universities are still the BNCC's strongest opponents. At the public hearings held by the CNE, university representatives repeatedly voiced their disapproval, sometimes directed at conceptual differences to the BNCC's content, but also, and more alarmingly, at its very existence. Many Brazilian education scholars believe the BNCC infringes upon teachers' and schools' pedagogical autonomy and strongly oppose any version of it, especially one approved by a government who many see as illegitimate. If the University Departments of Education do not accept the BNCC, it is very unlikely they will incorporate it into their curricula.

A more effective enforcement could come from cities and states requiring the skills and competencies specified in the BNCC as part of their teacher admission exams. If the initial teacher education programs incorporate these skills and

competencies in their curricula, it will be a profound shift from the current theoretical focus. However, the issue of how to teach these skills and competencies will remain, as it goes beyond the BNCC's reach.

To address teaching quality more broadly, the Ministry of Education developed a different "common core" for teacher training programs (both initial and ongoing) and sent it to the consideration of the National Education Council at the end of 2018. The CNE approved it unanimously in November 2019. The document currently awaits final sanction and publication by the Ministry of Education.

Considering how crucial teacher quality is for student outcomes, if the BNCC fails to affect these programs its impact will be shortchanged. The professional development offered directly by departments of education will more easily incorporate their own BNCC-aligned curricula than the university-based programs, which enjoy greater autonomy and are guided by interests and incentives many steps removed from the needs and aspirations of public-school classrooms. Since higher education is under the federal government's direct responsibility, it is up to the Ministry of Education to develop and implement policies that will ensure these university-based programs better prepare its students to become excellent teachers. The third sector, in this case led by the non-profit *Todos pela Educação* (All for Education, in a literal translation), is placing great focus on building a strong knowledge-base and placing pressure on the government to reform teacher training as the main path towards improving education quality in Brazil.

2.7 The BNCC and National Student Evaluations

As a federal policy, the BNCC will only be successfully implemented if the student evaluations can demonstrate that students have developed the skills and competencies laid out in the document. The evaluations need to focus on the BNCC, not on the local curricula, and serve as a national thermometer of education quality. Brazil has a strong, technically robust and long-standing student evaluation system whose rubric has had a strong influence over city and state curricula. With the BNCC, cities and states gain more robust and detailed guidance for their curricula and the policies that follow: classroom materials, professional development, and local student evaluation systems. If these policies are well-implemented at the local level, the results should be reflected in the national evaluations, which, in contrast to the local evaluation systems, should not be curriculum-based but focus on what the BNCC determines all Brazilian students should learn. The BNCC returns the national evaluation system to its rightful place of informing whether school systems are succeeding in developing students' skills and competencies at a few crucial milestones, instead of limiting what should be taught to what is tested.

Brazil's Basic Education Evaluation System, SAEB, was created in 1990, but results are only comparable from 1995 on when INEP, the federal institute responsible for SAEB, adopted the Item Response Theory (IRT) methodology. Since then, a representative sample of public-school students' Portuguese and Math skills have

been evaluated at the end of primary education (currently fifth grade), end of lower secondary (currently ninth grade), and end of high school every 2 years. In 2005, the evaluations were extended to all students at the end of primary and lower secondary education and in 2017 all students at the end of high school were also included, generating results per school and city for each of these three stages of basic education.

Since 2007, the fifth, ninth and 12th grade results are combined with promotion rates to generate a Basic Education Development Index (Ideb) for primary, lower secondary and upper secondary education for each school, city, state and the country, with corresponding goals set until 2021 by the Ministry of Education's National Education Research Institute (Inep). The Ideb has drawn public attention to the quality of Brazil's schools and school systems every 2 years with results available from 2005 on.[9] This schedule means the Ideb is always released on election years, when it can be featured on political campaigns and debates. Politicians, especially those seeking reelection, are keen to show improvement in their Ideb results.

The National Education Council resolution which instituted the BNCC for early childhood, primary and lower secondary education determined the national exams should incorporate its changes 1 year after publication, which corresponds to the end of 2018. The resolution that established the BNCC for high school was approved on December 17th, 2018 and gave at most 4 years for aligning the evaluations and exams for high school, such as the national college entrance exam (ENEM), to the new curricular objectives. In response to the first BNCC resolution, INEP published new evaluation rubrics for SAEB, announcing changes such as the anticipation of the literacy and numeracy exam previously administered at the end of third grade (8-year-olds) to the end of second grade (7-year-olds), and the inclusion of the social and natural sciences to the 9th grade exams (Inep 2018, p. 46).

Considering that the 2017 resolution determines BNCC-aligned curricula need to be implemented by cities and states by the start of the 2020 school year, the 2019 SAEB will likely serve as a baseline for cities and states, as opposed to an evaluation of BNCC implementation. As part of the international benchmarking done by the *Movimento pela Base* one of the lessons learned from common core implementation came from New York, where common core-aligned evaluations were implemented too soon, generating dissatisfaction among teachers and harming the reform. In order to avoid such a fate, INEP must communicate clearly what it will be evaluating in 2019 and how the corresponding Ideb results should be publicized considering the reform's implementation will still be underway. When using SAEB to evaluate BNCC implementation, it is important to keep in mind that the first cohort that will have gone through 12 years of BNCC-aligned curricula will only graduate high school in 2032.

[9] Ideb results for high schools only became available starting in 2017, when SAEB began evaluating all 12th graders, instead of a sample of them, allowing results to be calculated per city and school.

2.8 The BNCC and Twenty-First Century Skills

The most ambitious feature of the BNCC, which only appeared in the document's third version, was to establish ten core competencies that all students should develop throughout basic education, starting in early childhood. These competencies include lifelong learning, critical thinking, aesthetic sensibilities, communication skills, digital literacy, entrepreneurship, self-care, empathy, citizenship and ethics. The core competencies broaden the goals of basic education well-beyond academic skills to twenty-first century skills widely regarded as essential to preparing the next generations for the challenges of the 4th industrial revolution.

As ambitious as it was, the BNCC was criticized for the lack of explicit links between the ten core competencies and the subject specific competencies and skills, leaving cities and states with the responsibility of making these links themselves. In addition to this, the core competencies are not generally integrated into teacher training programs and are often de-prioritized for the more basic literacy and numeracy needs. In this context, the Ministry of Education and its partners in the third sector have developed orientations, produced videos and online courses aimed at filling this gap, and helped cities and states integrate the ten core competencies in their curricula.

The *Movimento pela Base* partnered with the Center for Curriculum Redesign in Boston to develop a document titled Dimensions and Development of the BNCC's Core Competencies where each of the ten core competencies is broken down into dimensions and subdimensions where the skills students should develop by different stages of basic education are specified.[10] Other materials developed include a two-hour online course created by *Nova Escola* (Brazil's number one magazine for teachers) and the Lemann Foundation called the BNCC's Core Competencies and an online platform called Competencies in the BNCC (http://www.competenciasnabncc.org.br/) that relates the general competencies to the subject- and grade-based one. These materials are organized for easy access in the BNCC's official website (http://basenacionalcomum.mec.gov.br/), the *Movimento pela Base*'s website (http://movimentopelabase.org.br/), as well as the Core Competencies' online platform mentioned above.

This concerted effort and the richness of the material available is a testament to the relevance that twenty-first century and socioemotional skills have gained in the Brazilian education debate. One of the main bastions of this theme has been the Ayrton Senna Institute, which in May 2015 launched the eduLab21, "to disseminate scientific knowledge to open the education frontiers and prepare children and youth for life in the 21st century" in partnership with national and international institutions (https://institutoayrtonsenna.org.br/pt-br/Atuacao/Atuacao2/edulab-21.html, translation mine). Their website provides a vast repository of resources on how to integrate socioemotional skills in curricula and the classroom. They are also the ones

[10] The document is available in the *Movimento pela Base*'s website at the following address: http://movimentopelabase.org.br/wp-content/uploads/2018/03/BNCC_Competencias_Progressao.pdf

investing in ways to measure these skills and have created the SENNA, an instrument to measure socioemotional competencies, especially those associated with the big five (openness, extraversion, agreeableness, conscientiousness, neuroticism), in school systems. Another third sector institution that has become a leader in this discussion is the Inspirare Institute, through Anna Penido, a member of the *Movimento pela Base*, and strong advocate for the core competencies. She is featured in most of the videos and cited in most of the documents regarding the BNCC's core competencies. One of Inspirare's iniative is the website *Porvir* (http://porvir.org/), which is another great source of information, materials and references for school systems, schools and teachers interested in implementing the core competencies and socioemotional skills more broadly.

Although the third sector plays an important role in providing supporting materials, the materials that reach the classrooms and students are the ones provided by the government, mostly through the PNLD. As mentioned above, the PNLD 2019 brings a project-based textbook based on the BNCC's core competencies. Since it is the first time this kind of material will be produced, it will be interesting to see what the publishers will come up with and how this will be received by teachers from 1st through 5th grades. Unfortunately, the PNLD has never been evaluated or even monitored closely to try to understand how different materials might affect student performance. Hopefully, the third sector can help fill this gap as well.

Despite all these efforts, the extremely low learning levels presented at the outset of this chapter serve as strong deterrents from focusing on these core competencies as school systems feel great pressure to focus on the academic competencies to the exclusion of all else. Especially since Math and Portuguese are the only subjects that count toward the Ideb, the indicator that holds the most political weight. For this reason, school systems which have already surpassed their Ideb goals are usually the ones who implement reforms aimed at developing twenty-first century skills. One such example comes from Sobral, a city in the northeastern state of Ceará that boasts the highest Ideb results in Brazil and has begun implementing a program focused on developing their teachers' socioemotional skills starting in 2018.

In order to promote the core competencies, Brazil will need to integrate them in its evaluation system, SAEB, or at the very least its strongest proponents will need to demonstrate to cities and states that integrating these core competencies in their curricula and materials will improve learning outcomes in all areas, including Portuguese and Math.

Ensuring all Brazilian students master the ten core competencies laid out by the BNCC by the end of high school is a long-term, extremely ambitious goal. Before we can set a timeframe for when we will be able to achieve this feat, we need to know where we stand. Due to the core competencies' complexity, each involves several skills, attitudes and sometimes values, it is unclear whether we will be capable of measuring all ten of them and by when. Until then we are in the company of the OECD, which is already tackling this challenge and will likely pave the way for Brazil in this respect.

References

Abrucio, F. L., Seggatto, C. I., & Pereira, M. C. G. (2016). Regime de Colaboração no Ceará: Funcionamento, Causas Do Sucesso e Alternativas de Disseminação do Modelo http://www.institutonatura.org.br/wp-content/uploads/2016/12/Relatorio-Ceara-AF-Web.pdf. Accessed 30 Nov 2019

Brazil. (1988). *Presidência da República*, *Constituição da República Federativa do Brasil de 1988*. http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm. Accessed Mar 2019.

Brazil. (1996). *Presidência da República*, *Lei de Diretrizes e Bases*, Bill 9394/1996. http://www.planalto.gov.br/ccivil_03/LEIS/L9394.htm. Accessed Mar 2019.

Brazil. (2014). *Presidência da República, Plano Nacional de Educação*, Bill 13005/2014. http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2014/Lei/L13005.htm. Accessed Mar 2019.

Brazil. (2017, July 18). Presidência da República, Decree 9.099. http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2017/decreto/D9099.htm. Accessed Mar 2019.

CNE Conselho Nacional de Educação. (2010). *Resolução* 4 de 2010, http://portal.mec.gov.br/dmdocuments/rceb004_10.pdf. Accessed Mar 2019.

CNE National Education Council. (2017a). Decision 15 of 2017 on the matter of the BNCC. http://portal.mec.gov.br/docman/dezembro-2017-pdf/78631-pcp015-17-pdf/file. Accessed Mar 2019.

CNE National Education Council. (2017b). Resolução 2 de 2017. http://basenacionalcomum.mec.gov.br/wp-content/uploads/2018/04/RESOLUCAOCNE_CP222DEDEZEMBRODE2017.pdf. Accessed Mar 2019.

Elango, S., Garcia J. L., Heckman, J., & Hojman, A. (2015). Early childhood education. https://heckmanequation.org/www/assets/2017/01/FINALMoffitt-ECE-Paper2015.pdf. Accessed Mar 2019.

FNDE. (2017). Public Bid 01/2017 for 2019 PNLD textbooks. https://www.fnde.gov.br/programas/programas-do-livro/consultas/editais-programas-livro/item/10521-pnld-2019. Accessed 30 Nov 2019.

INEP. (2018). Resumo Técnico: Censo da Educação Básica 2018 [recurso eletrônico]. http://download.inep.gov.br/educacao_basica/censo_escolar/resumos_tecnicos/resumo_tecnico_censo_educacao_basica_2018.pdf. Accessed Mar 2019.

InfoBNCC #2. (2019, October). http://movimentopelabase.org.br/wp-content/uploads/2019/10/infobncc2_out2019_final.pdf. Accessed Dec 2019.

MEC. (2016). *Portaria MEC 790, July 27th 2016*. http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=46471-link-port-790-base-curricular-pdf&category_slug=julho-2016-pdf&Itemid=30192. Accessed Mar 2019.

MEC. (2018). Paraná aprova primeiro currículo em consonância com a BNCC. http://portal.mec.gov.br/ultimas-noticias/222-537011943/71361-parana-aprova-primeiro-curriculo-em-consonancia-com-a-bncc. Accessed 30 Nov 2019.

OECD. (2005). The definition and selection of key competencies: executive summary. https://www.oecd.org/pisa/35070367.pdf. Accessed Mar 2019.

OECD, PISA. (2012). Results in focus: What 15-year-olds know and what they can do with what they know, p. 8. http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf. Accessed Mar 2019.

Todos Pela Educação. (2018). Educação Já, 21–24. https://www.todospelaeducacao.org.br/_uploads/_posts/58.pdf. Accessed 20 Mar 2019.

United Nations, Department of Economic and Social Affairs, Population Division. (2017). World population prospects: The 2017 revision. https://population.un.org/wpp/Publications/Files/WPP2017_Wallchart.pdf. Accessed 30 Nov 2019.

World Bank Data. (2015). https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=BR-OE. Accessed 20 Mar 2019.
World Economic Outlook Database, International Monetary Fund, October. (2018). World economic outlook database. https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx. Accessed 20 Mar 2019.

Chapter 3
Curriculum and Teacher Education Reforms in Finland That Support the Development of Competences for the Twenty-First Century

Jari Lavonen

Abstract This chapter analyzes how learning twenty-first century competences has been implemented in the Finnish educational context through the enactment of national and local level curricula and the design of a teacher education development program in a decentralized education system, in which teachers, schools, municipalities, and universities have high autonomy. The curricula and development program emphasize learning twenty-first century competences. Both were designed in collaboration with Finnish teachers and teacher educators, representatives from the Ministry of Education and Culture, the Association of Finnish Local and Regional Authorities, the Teacher's Union, the Student's Unions, and the Principal Association. The major actions taken to implement these changes included piloting, seminars and conferences, having different support and local level collaborations, and networking. According to recent evaluations, both endeavors – the development of national and local level curricula and a teacher education development program – have resulted in progress towards implementing twenty-first century competences in schools and for teacher education.

3.1 Introduction

The Finnish education system is an internationally recognized example of a high-performing system that successfully combines high quality with widespread equity and social cohesion through reasonable public financing (Niemi et al. 2012). International interest in the Finnish education system started in 2002, when the results from the first Program for International Student Assessment (PISA) were

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published and Finnish 15-year-old students were ranked high in reading, science, and mathematics. Thereafter, Finnish students have achieved high scores among OECD countries in 2000, 2003, 2006, and 2009 (OECD 2007, 2010). Both high scores and low variation in performance results are typical considered as outcomes of a successful education system. The International Education Database[1] recently ranked Finland as second in the world for the impact a nation's education system has had on stabilizing its economy and developing its social environment.

The success of Finnish education has been explained in large part due to Finnish education policy and its implementation, which is always aiming to recognize challenges and overcome them through collaborative reform and strategy. These efforts include developing program processes in which policymakers, administrators from the Ministry of Education [2], municipalities[3], universities, teachers, and teacher educators design strategies and development programs (Simola 2005). Moreover, the decentralized and autonomous role of professional teachers and teacher educators to implement curriculum and assessment practices is another reason for Finnish success in education (Välijärvi et al. 2002). Professional teachers play an important role in the Finnish decentralized educational system. They are responsible for participating in local curriculum design, designing learning environments and courses, and, moreover, assessing both their own teaching and their students' learning outcomes. Professional primary and secondary teachers are educated at traditional universities in a 5-year master's program, which has been the case in Finland for more than 45 years. All teachers working in Finnish schools must have completed this 5-year program.

The PISA results are considered an important indicator for the competence young people have for living and succeeding in the twenty-first century. The OECD utilized the outcomes of its project—*Definition and Selection of Competencies* (DeSeCo) (OECD 2005)—while it designed the PISA framework, which was used for PISA test item design (Ananiadou and Claro 2009). The outcomes of the DeSeCo and other relevant analysis of the twenty-first century competences and learning (Look: Voogt and Roblin 2012; Reimers and Chung 2016) were also used in Finland when the new curriculum was designed between 2014 and 2015. Therefore, from a Finnish point of view, its educational outcomes are in line with DeSeCo's list of twenty-first century competences. Moreover, the DeSeCo and other relevant analysis of the twenty-first century learning descriptions were used as one framework in designing the Finnish curriculum, which is described below. In this chapter, analysis and discussions are made only in the framework of the DeSeCo.

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[1] https://worldtop20.org/education-data-base?gclid=Cj0KCQiA-onjBRDSARIsAEZXcKZKxRAo5fD3GqmaUE87NwK-6TERn1GLz3vJXZi2TVFH7U4r0hVVmTPMaAjB1EALw_wcB

[2] The Ministry of Education and Culture is responsible for the overall planning, steering and, supervising pre-primary education and care, as well as for drafting the necessary legislation. https://minedu.fi/en/frontpage

[3] Providers of education (cities and municipalities) are responsible for preparing a local curriculum and organizing primary and secondary education.

According to DeSeCo (OECD 2005), individuals in the twenty-first century need to be able to use a wide range of tools—including socio-cultural (language) and digital (technological) ones—to interact effectively with the environment, to engage and interact in a heterogeneous group, to perform inquiry-oriented work and problem solving, to take responsibility for managing their own lives, and to act autonomously. In this environment, both critical and creative thinking are needed to learn these competencies.

Despite the relatively high ranking of the Finnish education system, several challenges have been recognized in the last 8 years. When the PISA 2012 (OECD 2013) and 2015 (OECD 2016) reported declining learning outcomes for Finnish youth, Finnish policymakers argued that the educational system was no longer promoting twenty-first century competences nor adequately preparing students for the future. The discussion in Finland has been similar to several other countries and has been based around questions about which knowledge and skills should be taught and which competencies the next generation will need (Reimers and Chung 2016). Another discussion in Finland has concerned the challenges linked to the impact and use of new technologies inside and outside of the school environment (Niemi et al. 2012). In addition to PISA, the Teaching and Learning International Survey 2013 (TALIS) (OECD 2013) demonstrated several weaknesses in the operation of Finnish schools and in teacher activities.

Because of these challenges, several national forums, committees, and projects have been launched in Finland since 2013—including Future Upper Secondary School (MCE 2013), the Future Primary and Secondary Education Group (Ouakrim-Soivio et al. 2015), and The Finnish Teacher Education Forum (MEC 2016)—as a part of Prime Minister Sipilä's government (2015–2019) programs (Government Publications 2015). Moreover, the preparation of a national core curriculum for both basic (primary and lower secondary) and upper secondary education (Finnish National Board of Education 2014, 2015) has been part of these endeavors. Challenges in the Finnish education system were discussed in these forums, committees, and projects and were based on the OECD, PISA, and TALIS (OECD 2013, 2014) surveys and on national monitoring reports, which were produced by the Finnish Education Evaluation Centre (e.g., Blömeke et al. 2018). The challenges in Finnish education can be summarized based on these reports and are listed below. The main challenges related to twenty-first century competences are underlined:

– *student-level challenges*: decrease in learning outcomes, wellbeing, and engagement in learning and lack of interest in science, technology, engineering and mathematics (STEM) careers; various needs and support to the learning processes of various learners; and, moreover, challenges in integrating formative and summative assessment in order to support learning;
– *classroom-level challenges*: challenges in guiding students in active and collaborative learning processes; challenges in teaching and learning in heterogeneous and multicultural classrooms; challenges in supporting students to learn twenty-first century competencies according to the new curriculum; and challenges in designing and using versatile inside and outside of school learning environments, including the use of technology in learning;

- *school- and city-level challenges*: increase the variation between schools in the learning outcomes; lack of teachers' collaboration; organizing quality work at the local level; designing and implementing improvements or education reforms and using digital tools in teaching and administration; lack of pedagogical leadership support for teacher's professional learning, including teachers' personal development plans and support in induction phase; and lack of resources;
- *challenges in teachers' competencies*: challenges in pedagogical competences and innovative orientation; lack of willingness and competencies for personal professional development and for the development of the school environment; and teachers' local and international networking;
- *society-level challenges*: number of young people dropping out of school or from the labor market and an increase in inequality; the influence of digitalization, such as artificial intelligence and automation, on the education sector; the need for continuous training of adults to reflect the changes in working life, like digitalization; and the need to support sustainable development.

A development project or reform, like curriculum reform, in primary education or teacher education is a common tool for improving school education and overcoming the recognized challenges (Garm and Karlsen 2004; Young et al. 2007). Nonaka et al. (2006) argue that implementing new ideas to practice builds on learning processes and knowledge creation that span the individual, group, and collective level, and peers seek help and guidance from more expert colleagues. A similar idea is emphasized in the communities of practice, or learning at the workplace or communities, where professionals access, adopt, and internalize knowledge that has been developed in the community (Wenger 1999). In order to have success designing and implementing reform or development programs at the national level, the OECD (Burns and Köster 2016) recommend the following: engage stakeholders, such as teachers, university professors, and teacher union members; employ organizations to design the strategy; strive for consensus in the design; allocate sustainable resources for the design and implementation of the strategy; organize pilot projects; and disseminate the outcomes of the pilots.

As described earlier, several national projects have been launched in Finland since 2014, which aim to implement twenty-first century competences in teaching and learning practices. This paper focuses on two national level projects, which aim to contextualize and implement twenty-first century competences for the Finnish education context.

3.2 Curriculum Reform in Basic Education: Aiming to Support the Development of Competences for the Twenty-First Century

Since 1985, the Finnish curriculum has been written at two levels: the national level core curriculum and the local or municipal school level one. The national core curriculum includes general aims as well as the objectives and core contents of

different school subjects. Schools and municipalities prepare the local curriculum, which takes into account the local context and needs based on the national core curriculum.

In Finland, curriculum reform started at the political level, when the government emphasized twenty-first century competences should be better integrated into schools than in the previous curriculum (Change in Basic Education Act 642/2010). The national framework curriculum was designed during the years 2013 and 2014 in a collaborative project, which is described below. A few guiding questions related to the reform were stated by the National Board of Education[4] as follows (Vahtivuori-Hänninen et al. 2014):

- What will education mean in the future? What types of competences will be needed in everyday and working-life situations? What kind of learning environments and practices or teaching methods would best produce the desired education and learning?
- How will change be realized at the municipality and school level, and even in every lesson?
- What kind of competences will teachers and other school staff need in order to be able to collaborate and promote learning for the future?
- How does the national core curriculum guide the preparation of the local curriculum and support the work of teachers and the whole school community? (FNBE 2014)

The preparation process was collaborative as it has always been. Large panels of experts— involving pre-primary classroom teachers and subject teachers, principals, teacher trainers, educational scientists, researchers from different subject areas, and representatives of various stakeholders—helped to prepare the curriculum together. The whole process was transparent and publicly accessible through social media tools, a variety of different open discussion forums, and local meetings held in various areas in Finland.

After the expert team completed the first draft, all of the materials, including the draft curriculum, were uploaded to the Finnish National Board of Education website for comments. All of the teachers, teacher educators, stakeholders, and even parents could comment freely on the first draft. The comments were read, and a content analysis of the comments was made. After this, a new draft based on the comments was prepared and posted on the website again for comments. The involvement of the various stakeholders, and their feedback, in the design process was essential for the implementation. The stakeholders felt involved in the implementation of the curriculum in a way Ogborn (2002) has described as the development of ownership to the reform or development program.

The above questions guided the design of the curriculum as did discussions about the competences needed in the twenty-first century, about redefining the aims of

[4] The Finnish National Board of Education is a national development agency and is responsible for preparing the national core curriculum, supporting its implementation, developing school education, and financing in-service training programmes for teachers. https://www.oph.fi/english

education, and about how to organize learning to meet the demands of the twenty-first century. Consequently, the national level curriculum process between 2013 and 2014 has helped to develop the Finland educational sector for the twenty-first century (Vahtivuori-Hänninen et al. 2014). While designing the curriculum, the transversal competences were also taken into account. The transversal competences were grouped under the following competence areas: taking care of oneself, managing daily life; multiliteracy; digital competence; working life competence, entrepreneurship; participation involvement, building a sustainable future; thinking and learning to learn; and cultural competence, interaction, and expression. These 7 competence areas are close to the DeSeCo definition of twenty-first century competences and are assumed to promote students' growth as human beings and as citizens for the twenty-first century. In addition to a general description of the transversal competences, the aims for those competences were included under subject-specific curriculum aims. This approach was supposed to help teachers understand the meaning of the competences and how to implement them (Halinen 2018). Moreover, it was assumed that it is easier for the textbook authors and the designers of the digital learning environments to design the teaching and learning materials and environments that take into account the transversal competences. In Table 3.1 below, the twenty-first century competencies (DeSeCo) and the Finnish transversal competences (FNBE 2014) are compared.

Preparation of curriculum in Finland engage teachers to become familiar with the transversal competences at two levels. Teachers first become familiar with the new curriculum and introduction of transversal competences by participating in the national level curriculum work. During the local curriculum process, teachers and other stakeholders have been active in the preparation of the local curriculum and have described in detail, how the learning of transversal competences is integrated to school subjects. According to Jauhiainen (1995) and Holappa (2007) local curriculum processes inspire and empower teachers and principals to design the local curriculum and their own work processes, and increase the overall quality of education.

In order to support the learning of transversal competences, curriculum reform aims to increase collaborative classroom practices by engaging students in multidisciplinary, phenomenon- and project-based studies in which several teachers may work with any number of students simultaneously. In practice, all schools have to design and provide at least one such study period per school year for all students, which focuses on studying phenomena or topics that are of special interest to students. Students are expected to participate in the planning process of these studies. Schools will provide their own specific viewpoints, concepts, and methods for the planning and implementation of these study periods. Which topics are chosen and how these integrative study periods are realized will be decided at the local school level.

To support schools in preparing and implementing the curriculum, the National Board of Education established the Majakka-network (FNBE 2016). This network

Table 3.1 Comparison of twenty-first century competences and finnish transversal competences introduced in the National Core Curriculum

21st century competences (DeSeCo)	Finnish transversal competences introduced in the National Core Curriculum
Ways of thinking	
Critical thinking	Pupils are instructed to find how knowledge can be built, for example by asking questions and looking evidence in order to answer these questions … pupils are instructed an opportunity to critically analyze the issue from different perspectives
Creative thinking	Finding innovative solutions that requires students to learn to see alternatives and unite perspectives Exploratory and creative work, working together, and contributing to the development of thinking and learning to learn
Learning to learn	Use information independently and interact with others for problem solving, reasoning, and concluding Practicing appropriate behavioral and collaborative skills in working situations, and noticing the importance of language skills and interaction skills
Ways of working	
Inquiring	Collaborative, inquiry oriented and creative working
Problem solving	Use information independently and interact with others for problem solving, reasoning, and concluding
Communication and collaboration	Practicing appropriate behavioral and collaborative skills in working life situations, and noticing the importance of language skills and interaction skills
Tools for working	
Information literacy	Cultural literacy, interaction, and communication Multiliteracy refers to the skills of interpreting, producing, and valuing different texts that help students to understand diverse forms of cultural communication and to build their own identity
Technological skills, media literacy	Develops skills in both traditional and multi-media environments that utilize technology in different ways ICT skills are developed in four major areas … and understand the use and operation of ICT …
Acting in the world	
Global and local citizenship	Taking care of yourself, everyday life skills, and safety …students grow as active citizens who act according to democratic rights and responsible …
Cultural awareness and social responsibility	Working life skills and entrepreneurship … Participation and influence, responsibility for sustainable future

has organized meetings and designed a web platform. Additionally, in 2017 the National Board of Education allocated 100 million euro to the providers of education for hiring tutor teachers who can support the teachers in their classrooms in the implementation of the transversal competences to their teaching (MEC 2017). Altogether, 2000 tutor teacher positions were established in Finnish municipalities

in order to support the learning of transversal competences, especially for creating new digital learning environments (Oppiminen uudistuu 2018).

In 2018, the Finnish Education Evaluation Centre evaluated both the implementation of the national core curriculum at the local level and the process of preparing the local curriculum by analyzing the local curriculum of all education providers. Moreover, the Centre interviewed curriculum specialists to learn about the success and challenges of implementing the local level curriculum. According to the evaluation, the national and local steering systems have supported the implementation of the curriculum as well as classroom teaching. Moreover, the transversal competences have been integrated with the aims of the school subjects at the school level, and teachers are aware of this integration. However, there are challenges with integrating the transversal competences into classroom teaching and learning (Saarinen et al. 2019),

3.3 Teacher Education Reform: Aiming to Support the Development of Skills for the Twenty-First Century

In order to make progress in teacher education and overcome the recognized challenges, the Minister of Education and Culture created a Finnish Teacher Education Forum in 2016 (MEC 2016). The forum was asked to collaboratively prepare a development program for teacher education. Additionally, the forum was asked to identify key actions for developing teacher education and supporting the implementation of the development program.

Between 2016 and 2018, the teacher training forum organized a literature review related to teachers' knowledge and education. They held 12 nationwide meetings and 7 local meetings, in which teacher educators from Finnish universities and stakeholders related to teacher education, including unions and regional authorities, participated. These meetings discussed the challenges and aims of teacher education and the preparation of the development program for teacher education document.

The literature review, also organized by the forum, introduced the outcomes of research related to the role of education in a society; teachers' knowledge and learning; teaching and learning in a heterogeneous classroom; the individual differences of learners; and the design and use of educational innovations, such as education technology (Husu and Toom 2016). This review had an impact on the forum meeting discussions, and it influenced the design of the development program.

A national web-based brainstorming process related to the renewal of teacher education was organized based on the idea that a large group of people is smarter than a few elite individuals; such a group is also better at generating ideas, solving problems, fostering innovation, and coming to wise decisions (Surowiecki 2005). This nationwide brainstorming session also supported the implementation of the

development program: people will more easily adopt a strategy if they participate in developing it. A call to participate in the web-based brainstorming process was sent to teacher educators in all Finnish universities as well as to all teachers and administrative employees working in the field of education at both the national and local level. The participants were guided to generate ideas about what would be important for the future of teacher education and to evaluate and rank 10 ideas contributed by others. In the ranking, participants assigned a number from 0 to 100 in evaluating the importance of these ideas. The web-based brainstorming tool combined similar ideas for ranking. According to participants, the most important priorities for students to learn in teacher education were learning-to-learn skills, along with interaction and collaboration skills. The competences involved generating ideas, preparing for change, conducting research-based action, and collaborating in partnerships and networks so that teachers can participate collaboratively to develop classroom practices and culture in particular school contexts. Most of the top-ranked skills and competences identified were needed outside of the classroom. This indicated that in teacher education, participants believe more attention should be paid to the skills and competences needed for effective teacher collaboration.

The development program sets out three strategic competence goals for teachers' pre- and in-service education and their continuous life-long professional development. These competence goals do not actually include all the possible goals, but they do highlight the direction for the development of teacher education. According to this document, a professional teacher should have, first, a broad and solid knowledge base, including knowledge about a particular subject and pedagogy, how to accommodate diversity among learners, collaboration and interaction, digital and research skills, their school's societal and business connections, and ethics. Second, a teacher should be able to generate novel ideas and educational innovation while making the local curriculum, to plan inclusive education initiatives, and to design and adopt pedagogical innovations. Third, a teacher should have the competences required for the development of their own and their school's expertise, especially for the development of networks and partnerships with students, parents, and other stakeholders. In Table 3.2, twenty-first century competencies (DeSeCo) and the strategic aims of the Finnish development program for teacher education (MEC 2016) are compared.

In addition to strategic competence goals, the development program also includes six concrete strategic action guidelines, which determined the direction for the development of teacher education. After publishing the development program in October 2016, 31 pilot projects were selected and started at the end of 2016. These projects have been organized according to the three strategic aims and six strategic action guidelines for the development of teacher education. Altogether, 30 million euro was allocated to these projects in the state budget. During the forum meetings in 2017 and 2018, the pilot projects gave presentations and got feedback from other participants in the meetings.

Table 3.2 Comparison of twenty-first century competences and the strategic aims of the Finnish development program for teacher education

Twenty-First century competences (DeSeCo)	The strategic aims of the Finnish development program for teacher education
Ways of thinking	
Critical thinking	Research skills (skills required to be critical and consume research-based knowledge)
Creative thinking	Skills for generating and evaluating ideas related to classroom teaching and learning
Learning to learn	Skills for developing teachers' own expertise through reflective activities Skill for coaching , mentoring, or training other teachers
Ways of working	
Inquiring and problem solving	Skills for planning, implementing, and assessing teachers' own practices and their students' learning Research skills (skills to produce research-based knowledge)
Communication and collaboration	Interaction skills for collaborating in different networks and partnerships
Tools for working	
Information literacy	Subject matter knowledge, pedagogical and pedagogical content knowledge, and contextual knowledge
Technological skills, media literacy	Skills for acting in various digital and physical learning environments, including digital skills, and for learning in settings outside of the classroom Digital skills Knowledge about learning and diversity among learners
Acting in the world	
Global and local citizenship Cultural awareness and social responsibility	Awareness of various cross-curricular topics, including those related to human rights and democracy, entrepreneurship education, sustainable development, and globalization Awareness of the different dimensions of the teaching profession: the social, philosophical, psychological, sociological, and historical bases of education as well as the school's societal connections

The Finnish Education Evaluation Centre evaluated the implementation of the Finnish development program for teacher education by analyzing the pilot project documents, organizing a survey for the pilot projects, and interviewing the stakeholders and pilot project experts. According to the evaluation, the teacher education reform model prepared at the teacher education forum had several strengths, including the networking and bringing together of different experts and stakeholders. This networking had supported the implementation of all strategic competence goals, including the emphasis on twenty-first century competences. Most pilot projects were recognized to have a strong emphasis on community building and collaboration. The evaluation also noted challenges and further targets for implementing program, such as creating a clear plan for supporting the achievement of the strategic competence goals. Moreover, the effectiveness of the pilot projects should be

monitored and evaluated during and after its completion in 2023–2024 (Niemi et al. 2018).

3.4 Discussion

This chapter has analyzed the challenges of Finnish education, especially the implementation of twenty-first century competences into primary, secondary and teacher education. Additionally, it has examined how these challenges will be overcome through the collaborative design and implementation of the national level curriculum and national teacher education development program in a decentralized education system, where autonomy is emphasized at the teacher, school, municipality, and university level. Based on the national evaluations, the implementation of the core curriculum and teacher education development program has supported the development of teaching and learning of twenty-first century competences. However, it is too early to evaluate the level of impact the curriculum and development program have had on education practices or how well the curriculum and program have supported teacher education and schools to overcome the identified challenges in education.

The design and implementation of the national level strategies, curricula, and programs were all supported by goal orientation, planning, designing and timing, collaboration and networking, piloting and dissemination of the pilot outcomes, and a reflective orientation (Burns and Köster 2016). Collaboration and networking created forums for discussing the challenges in schools and teacher education, as well as for setting strategic aims to support designing the core curriculum or the teacher education development program (Kitchen and Figg 2011; Paavola and Hakkarainen 2014). Therefore, collaboration happens between teachers and teacher educators in schools or universities, between the schools or universities and stakeholders in education, like the Ministry of Education and Culture, and between providers of education or municipalities and individual teacher educators and teachers. These supportive characteristics for the implementation of the development program or strategy have helped teachers' and teacher educators' professional learning (Maier and Schmidt 2015).

In order to meet the challenges of the future, transversal competences have been emphasized since 2014 at the national and local level in Finland. Transversal competences have been integrated into the aims of various school subjects. Moreover, they are emphasized in collaborative classroom practices through engaging students in multidisciplinary, phenomenon- and project-based studies. The transversal competences were described in 7 categories: taking care of oneself, managing daily life; multiliteracy; digital competence; working life competence, entrepreneurship; participation involvement, building a sustainable future; thinking and learning to learn; and cultural competence, interaction, and expression. These 7 competence areas are in line with the outcomes of the DeSeCo project (Table 3.1). The implementation of the transversal competences for teaching and learning is assumed to holistically

promote students' growth as human beings and as citizens. In order to support the adoption of transversal competences, the national level core curriculum was designed in an extensive collaboration process where the Finnish National Board of Education worked side by side with municipalities, schools, and teachers as well as with teacher educators, researchers, and other key stakeholders. At the level of the local curriculum, there is autonomy for teachers and municipality level authorities for designing the curriculum and developing their own innovative approaches for implementing the transversal competences into teaching and learning.

The national level project, the teacher education forum, aimed to better support teachers to meet the challenges of the future. The development program was designed by 70 experts from universities and applied universities, the Ministry of Education and Culture, and representatives from the Association of Finnish Local and Regional Authorities, Teacher Union, Student Union, and the Principal Association. The collaboration and activation of teacher educators was supported through local and nationwide meetings, allocation of resources to pilot projects, and a national web-based brainstorming process. The brainstorming process aimed to solicit diverse opinions related to the development of teacher education. The forum recognized three strategic competence goals that should be emphasized in teachers' pre- and in-service education in order to prepare teachers to teach twenty-first century competences. According to these goals, student teachers and teachers should learn the following: first, broad and solid knowledge base in a subject matter and pedagogy, including accommodating diverse learning styles and using digital and research skills; second, competence in generating novel ideas and educational innovation; and, third, competences required for the development of the teachers' own expertise and their school's (MEC 2016). These three strategic competence goals are in line with the outcomes of the DeSeCo project (Table 3.2). While designing the program, several local and nationwide meetings were organized during the design and dissemination phase. Altogether, 31 pilot projects were financed by the Ministry of Education to implement the development program.

Characteristics of the Finnish education system include decentralization and autonomy. Decentralization allows teachers and teacher educators to address local contexts in the implementation of the national curriculum, strategies, and programs. Decentralization and autonomy are strongly linked to the Finnish way of interpreting the teacher's and the teacher educator's professionalism, as well as the status of teachers and teacher education in Finnish society. However, decentralization and autonomy make the preparation of national strategies or national guidelines challenging—how should autonomous entities be supported in adopting these strategies or guidelines? In Finland, twenty-first century competences have been implemented to school and teacher education through the design and implementation of the national core curriculum and the teacher education development program. They were prepared in collaboration with the national level and implemented at the local level. Teacher education institutes or faculties and providers of education—responsible for organizing teachers' professional learning as well as compulsory and secondary education—have been supported in the development and implementation in many ways. First, the design and implementation have engaged teachers and teacher

educators in the preparation of the national core curriculum and teacher education development program. Second, they have organized professional learning through mentoring, training, and pilot projects. Third, several national and local level meetings and seminars have been organized to support communication and professional learning. Thus, the design and implementation of the national core curriculum and teacher education development program offer a supportive environment for teacher educators and teachers to familiarize them with twenty-first century competences and to help them plan teaching and learning strategies that support these competences (Müller et al. 2010).

National level collaboration in designing the curriculum and developing reforms is a tradition at both the national and local level in Finland. They are always designed in heterogeneous groups with experts from different fields. During the process, it becomes clear what the aims are and how to achieve them. Subsequently, a draft reform plan is discussed, and feedback is collected and analyzed. Moreover, resources for piloting and implementation are offered. Consequently, the nature of implementation and design has been in line with OECD recommendations (Burns and Köster 2016). Based on Finnish experiences, some minor modifications to the supportive nature of preparing national and local curricula are suggested by Burns and Köster (2016). At the national level, the following factors are critical for designing a new curriculum or implementing a new strategy:

- Good timing or enough time for designing and implementing the program, strategy, or reform;
- Engage stakeholders—like teacher educators, providers of education, university administrators, and employer organizations—to design the program, strategy, or reform and to implement it;
- Be in partnership with teacher unions and employer unions;
- Strive for consensus in the design and implementation;
- Use sustainable resources for the design and implementation of the program, strategy, or reform;
- Use holistic development, or development of several sectors of education at the same time, and organize interaction between these projects.

References

Ananiadou, K., & Claro, M. (2009). *21st century skills and competences for new millennium learners in OECD countries: OECD education* (Working papers, 41). Paris: OECD Publishing. Retrieved from https://doi.org/10.1787/218525261154

Blömeke, S., Eklöf, H., Fredriksson, U., Halldórsson, A. M., Jensen, S. S., Kavli, A. B., Kjærnsli, M., Kjeldsen, C., Nilsen, T., Nissinen, K., Ólafsson, R. F., Oskarsson, M., Rasmusson, M., Rautopuro, J., Reimer, D., Scherer, R., Sortkær, B., Sørensen, H., Wester, A., & Vettenranta, J. (2018). *Northern lights on TIMSS and PISA* 2018: TemaNord, 524. Cobenhagen: Nordic Council of Ministers. Retrieved from https://karvi.fi/app/uploads/2018/09/Northern_Lights_on_TIMSS_and_PISA_2018.pdf

Burns, T., & Köster, F. (Eds) (2016). *Governing education in a complexworld.* Paris: OECD Publishing. Retrieved from https://doi.org/10.1787/9789264255364-en

Change in Basic Education Act (Laki perusopetuslain muuttamisesta) 642/2010. Retrieved from: http://www.finlex.fi/fi/laki/alkup/2010/20100642

Garm, N., & Karlsen, G. E. (2004). Teacher education reform in Europe: The case of Norway; trends and tensions in a global perspective. *Teaching and Teacher Education, 20*(7), 731–744. https://doi.org/10.1016/j.tate.2004.07.004.

Government Publications. (2015). Finnish government programme: Finland, a land of solutions: Strategic program of Prime Minister Juha Sipilä's government 29 May 2015: Government Publications. Helsinki: Edita Prima. Retrieved from http://valtioneuvosto.fi/documents/10184/1427398/Ratkaisujen+Suomi_EN_YHDISTETTY_netti.pdf/8d2e1a66-e24a-4073-8303-ee3127fbfcac

Halinen, I. (2018). The new educational curriculum in Finland. In M. Matthes, L. Pulkkinen, C. Clouder, & B. Heys (Eds.), *Improving the quality of childhood in Europe: volume 7* (pp. 75–89). Brussels: Alliance for Childhood European Network Foundation. Retrieved from http://www.allianceforchildhood.eu/files/Improving_the_quality_of_Childhood_Vol_7/QOC%20V7%20CH06%20DEF%20WEB.pdf.

Holappa, A.-S. (2007). *Perusopetuksen opetussuunnitelma 2000-luvulla – uudistus paikallisina prosesseina kahdessa kaupungissa* [Curriculum of basic school in 2000 century: renewal of local curriculum in two cities]. Acta Universitatis Ouluensis. series E 94. Oulun yliopisto. Kasvatustieteiden tiedekunta.

Husu, J., & Toom, A. (2016). *Opettajat ja opettajankoulutus – suuntia tulevaan: Selvitys ajankohtaisesta opettaja- ja opettajankoulutustutkimuksesta opettajankoulutuksen kehittämisohjelman laatimisen tueksi* [Teachers and teacher education – directions to future: a review on research on teachers and teacher education for supporting the preparation of the teacher Eduaction Development Programme]. Opetus- ja kulttuuriministeriön julkaisuja. 2016:33.

Jauhiainen, P. (1995). *Opetussuunnitelmatyö koulussa. Muuttuuko yläasteen opettajan työ ja ammatinkuva?* [Preparation of a local curriculum: How do teacher professionalism and identity change?]. Tutkimuksia 154. Helsingin yliopiston opettajankoulutuslaitos.

Kitchen, J., & Figg, C. (2011). Establishing and sustaining teacher educator professional development in a self-study community of practice: Pre-tenure teacher educators developing professionally. *Teaching and Teacher Education, 27*(5), 880–890. https://doi.org/10.1016/j.tate.2011.02.003.

Maier, R., & Schmidt, A. (2015). Explaining organizational knowledge creation with a knowledge maturing model. *Knowledge Management Research & Practice, 13*(4), 361–381.

Ministry of Education and Culture (MEC). (2013). *Tulevaisuuden lukio: Valtakunnalliset tavoitteet ja tuntijako* [Future Upper Secondary School: National Aims and Allocation of Lesson hours]. Opetus- ja kulttuuriministeriön työryhmämuistioita ja selvityksiä 2013:14.

Ministry of Education and Culture (MEC). (2016). *Opettajankoulutuksen kehittämisohjelma* [Development program for teachers' -pre- and in-service Education]. Retrieved from https://minedu.fi/artikkeli/-/asset_publisher/opettajankoulutuksen-kehittamisohjelma-julkistettiin-opettajien-osaamista-kehitettava-suunnitelmallisesti-lapi-tyouran

Ministry of Education and Culture (MEC). (2017). *Osaamiseen ja tutkimukseen isot lisäpanostukset ensi vuoden budjetissa* [Next year budget promises more resources for education]. Ministry of Education and Culture. Retrieved from http://minedu.fi/artikkeli/-/asset_publisher/osaamiseen-koulutukseen-ja-tutkimukseen-isot-lisapanostukset-ensi-vuoden-budjetissa

Müller, J., Norrie, C., Hernández, F., & Goodson, I. (2010). Restructuring teachers' work-lives and knowledge in England and Spain. *Compare: A Journal of Comparative and International Education, 40*(3), 265–277. https://doi.org/10.1080/03057920902830061.

Niemi, H., Toom, A., & Kallioniemi, A. (2012). *Miracle of education: The principles and practices of teaching and learning in Finnish schools*. Rotterdam: Sense Publishers.

Niemi, H., Erma, T., Lipponen, L., Pietilä, M., Rintala, R., Ruokamo, H., Saarivirta, T., Moitus, S., Frisk, T., & Stylman V. (2018). *Maailman parhaiksi opettajiksi – Vuosina* 2016–*2018 toimineen Opettajankoulutusfoorumin arviointi* [The world's most competent teachers – Evaluation

of the Teacher Education Forum in 2016–2018]. Kansallinen koulutuksen arviointikeskus. Julkaisut 27:2018. Retrieved from https://karvi.fi/app/uploads/2018/12/KARVI_2718.pdf

Nonaka, I., von Krogh, G., & Voelpel, S. (2006). Organizational knowledge creation theory: Evolutionary paths and future advances. *Organization Studies, 27*(8), 1179–1208. https://doi.org/10.1177/0170840606066312

OECD. (2005). *Definition and selection of competencies (DeSeCo): Executive summary*. Paris: OECD Publishing. Retrieved from http://www.oecd.org/pisa/35070367.pdf.

OECD. (2007). *PISA 2006: Science competencies for tomorrow's world, volume 1: Analysis*. Paris: OECD.

OECD. (2010). *PISA 2009: Volume 2: Data*. Paris: OECD Publishing.

OECD. (2013). *PISA 2012. Results in focus. What 15-year-olds know and what they can do with what they know.* Paris: OECD Publishing. Retrieved from http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf

OECD. (2014). *Talis 2013 results: An international perspective on teaching and learning*. Paris: OECD Publishing. Retrieved from http://www.oecd-ilibrary.org/education/talis-2013-results_9789264196261-en.

OECD. (2016). *PISA 2015 results (volume I): Excellence and equity in education*. Paris: OECD Publishing. https://doi.org/10.1787/9789264266490-en.

Ogborn, J. (2002). Ownership and transformation: Teachers using curriculum innovations. *Physics Education, 37*, 142–146.

Oppiminen uudistuu. (2018). *Tasa-arvoisen peruskoulun tulevaisuus: Koulutustakuusta osaamistakuuseen* [The future of equal primary school: From training skills to knowledge skills]. Retrieved from https://oppiminenuudistuu.wordpress.com/category/uusi-peruskoulu/

Ouakrim-Soivio, N., Rinkinen, A., & Karjalainen, T. (2015). Tulevaisuuden peruskoulu. Opetus- ja kulttuuriministeriön julkaisuja 8:2015. Retrieved from http://urn.fi/URN:ISBN:978-952-263-340-8

Paavola, S., & Hakkarainen, K. (2014). Trialogical approach for knowledge creation. In SC. Tan, HJ. So, & J. Yeo (Eds.), *Knowledge creation in education* (pp. 53–73). Singapore: Springer Singapore.

Reimers, F. M., & Chung, C. K. (2016). A comparative study of the purposes of education in the twenty-first century. In F. M. Reimers & C. K. Chung (Eds.), *Teaching and learning for the twenty-first century: Educational goals, policies, and curricula from six nations* (pp. 1–24). Cambridge: Harvard Education Press.

Saarinen, J., Venäläinen, S., Johnson, P., Cantell, H., Jakobsson, G., Koivisto, P., Routti, M., Väänänen, M., Huhtanen, M., Kivistö, M., & Viitala, M. (2019). *OPS-TYÖN ASKELEITA Esi- ja perusopetuksen opetussuunnitelmien perusteiden* 2014 *toimeenpanon arviointi* [Stages of curriculum work – Evaluation of the implementation of the national core curriculum for pre-primary and basic education 2014]. Kansallinen koulutuksen arviointikeskus. Julkaisut 1:2019. Retrieved from https://karvi.fi/app/uploads/2019/01/KARVI_0119.pdf

Simola, H. (2005). The Finnish miracle of PISA; historical and sociological remarks on teaching and teacher education. *Comparative Education, 41*(4), 455–470. https://doi.org/10.1080/03050060500317810.

Surowiecki, J. (2005). *The wisdom of crowds*. New York: Anchor Books.

The Finnish National Board of Education (FNBE). (2014). *The national core curriculum for basic education*. Helsinki: FNBE National Board of Education. Retrieved from https://www.oph.fi/ops2016

The Finnish National Board of Education (FNBE). (2015). *The national core curriculum for upper secondary education*. Helsinki: National Board of Education. Retrieved from https://www.oph.fi/download/172121_lukion_opetussuunnitelman_perusteet_2015.docx

The Finnish National Board of Education (FNBE). (2016). *Majakka-kouluille yhteinen sähköinen alusta* [A common platform for schools participating the Majakka-network]. Retrieved from http://www.oph.fi/ajankohtaista/verkkouutiset/101/0/majakka-kouluille_yhteinen_sahkoinen_alusta

Vahtivuori-Hänninen, S. H., Halinen, I., Niemi, H., Lavonen, J. M. J., Lipponen, L., & Multisilta, J. (2014). A new finnish national core curriculum for basic education and technology as an integrated tool for learning. In H. Niemi, J. Multisilta, L. Lipponen, & M. Vivitsou (Eds.), *Finnish innovations & technologies in schools: A guide towards new ecosystems of learning* (pp. 33–44). Rotterdam: Sense Publishers.

Välijärvi, J., Linnakylä, P., Kupari, P., Reinikainen, P., & Arffman, I. (2002). *The finnish success in PISA-and some reasons behind it*. Jyväskylä: Kirjapaino Oma Oy.

Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies, 44*(3), 299–321. https://doi.org/10.1080/00220272.2012.668938.

Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*. New York: Cambridge University Press.

Young, J. C., Hall, C., & Clarke, A. (2007). Challenges to university autonomy in initial teacher education programmes: The cases of England, Manitoba, and British Columbia. *Teaching and Teacher Education, 23*, 81–93.

Chapter 4
Japanese Education Reform Towards Twenty-First Century Education

Shinichi Yamanaka and Kan Hiroshi Suzuki

Abstract This chapter describes an education reform towards twenty-first century education in Japan. The Ad Hoc Council on Education which was established in 1984 by Prime Minister was the starting point of the reform. Japanese society was also undertaking a transition from twentieth century industry to twenty-first century industry. Education reform was a part of it. That was the reason this education reform involved national wide debate including industry people, union people, mass media people, politicians as well as education people. This education reform covers all aspects of education, that is contents, teachers, facilities, school management system, education administration system and fundamental laws. At first this chapter focuses on reform of national standard curriculum from 1990 until 2020. The basic stance of this reform was that the teaching style must take the transition from cramming to help students acquiring the ability to learn and think on their own. And then other reforms such as introduction of national academic ability test, reform of teacher training system, reform of university entrance examination and reform of school management system are also described. This chapter describes the continuous efforts and challenges during this education reform.

4.1 Overview

Japan is currently undertaking reforms in school education toward twenty-first century education. These comprehensive reforms include a wide range of changes, such as reform of national curriculum standards, a new school evaluation system, introduction of a national academic performance test, teacher training, reforms in university entrance examinations and admission policies, and improved coordination between schools and society.

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These reforms aiming to better prepare students for the twenty-first century began in the 1980s. The starting point was a report by the Ad Hoc Council on Education set up by the Prime Minister in 1984. The report stressed that respect for the individual should be the fundamental principle upon which education reforms are built. It urged Japan to shift its focus from standardized, conventional rote learning towards learning that would help children develop the flexible and independent mindsets needed to think, judge, and take responsibility for their actions. After the report, Japanese education began to steer towards twenty-first century education with comprehensive policies to ensure the success of new approaches to teaching and learning.

However, the process of transforming into a twenty-first century education system has not been without challenges. For example, when Japanese students scored low on the PISA (Program for International Student Assessment) in 2003 and 2006, the public blamed the curriculum reform as the main reason for the decline and claimed public education should focus on helping children acquire academic knowledge. Nevertheless, Japan didn't alter the direction of its educational reform. Instead, in response to mounting public criticism, the National Assessment of Academic Ability was introduced in 2007. The purpose was to assess children's academic performance as a basis for further reforms. Since 2009, efforts such as employing more teachers, including assigning more teachers to schools with academic and behavioral problems, and introducing morning reading sessions at schools were implemented nationwide and have begun to demonstrate success. In 2012, Japanese children achieved the highest total PISA score among all the member states of the OECD.

On the other hand, although students' academic performance had improved, issues such as low motivation to learn and self-esteem remained. Further, the government had to consider making further changes to social and employment structures to prepare for anticipated technological advancements (such as artificial intelligence [AI]) and discussions of the OECD Education 2030.

With these conditions in mind, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) thoroughly reviewed the abilities and skills which children should aim to acquire and subsequently revised the National Curriculum Standards. The new standards will be implemented from 2020 to 2022 and include active learning (i.e., independent and interactive in-depth learning) in all school courses. The standards also include new subjects such as scientific exploration, general exploration, public comprehensive history, and comprehensive geography. The government has also improved university entrance examinations by reforming the selection process to evaluate applicants' broader competencies beyond academic ability and the mere quantity of their knowledge.

Furthermore, MEXT implemented reforms in teacher training programs in line with changes in the National Curriculum Standards: launching the induction training system; introducing the teacher's license renewal system; and improving training programs for working teachers to enhance their skills and abilities.

As for coordination between schools and society, the government established the School Management Council System (Community Schools) to incorporate local

communities' needs into school management. Additionally, a reform of the teaching certificate system aimed to employ people who were in non-teaching careers as full or part-time teachers.

The reform toward twenty-first century education is closely connected to the transition underway in the larger Japanese society. After the Meiji Restoration in 1868, when Japan became a modern nation-state, Japan focused on industrialization as a mean of national development to "catch up" with Western developed countries. A similar process has also occurred with the Japanese education system before and after World War II. In the 1980s, when Japan's GDP was the second highest in the world, Japan had to begin setting its own goals for prosperity without imitating the model of Western countries.

Recently the world has also undergone a great transformation due to globalization and the development of information and communications technology (ICT), including AI. To adapt to these major social changes and establish a twenty-first century education system, Japan has continued to prioritize education reforms.

4.2 Structure of the Chapter

All countries are now facing similar challenges to their societal and educational institutions due to the information revolution, globalization, and environmental changes. In response to these changes, Japan has been making comprehensive education reforms since the 1980s to bring its education system to the twenty-first century. This chapter starts by explaining the background of the educational reform in Japanese society and education.

Second, the chapter describes the National Curriculum Standards. Reform of the Curriculum was the starting point of the education reform in Japan. The National Curriculum Standards stipulate objectives, content, time allocation and course of study for each subject for each school level: primary, junior, and senior high schools. The revision of the National Curriculum Standards also required the revision of textbooks, as well as changes to teacher training, teaching facilities, and numbers of teachers. Based on these reforms, revision of the National Curriculum Standards was implemented to each local government and school.

Third, this chapter describes the National Assessment of Academic Ability for students which has been conducted by MEXT since 2007. The aim of the assessment is to measure students' academic achievement and identify any weaknesses with national and local educational policies, including the National Curriculum Standards.

Fourth, this chapter discusses the reform of University Entrance Examination. In Japan, the university entrance exam is still focused on assessing the amount of academic knowledge students acquired in school education. All efforts to reform primary and secondary education are in danger of failure unless the university entrance exam is successfully reformed.

Finally, the chapter describes the reform of the educational administrative system, including the relationship between national and local government and the partnership between schools and local communities.

This chapter is mainly based on the papers of the Central Council for Education and its sub-committees in MEXT, as well as reports of the Education Rebuilding Council and other education councils established in Cabinet Office.

Generally speaking, Education Councils established in Cabinet Office make recommendations on educational reform, then the Central Council for Education (CCE) established in MEXT makes more concrete recommendation taking into account of them. MEXT carries out educational policies based on the CCE's recommendations.

4.3 Background of the Reforms

4.3.1 Ad Hoc Council on Education[1]

In the 1980s, the Ad Hoc Council on Education stated that Japan's education system needed to be transformed from the twentieth to the twenty-first century. The Ad Hoc Council on Education was established as an advisory panel to the Prime Minister to support education reforms that were not only beneficial to educators, but also to society as a whole and the people of Japan. The Ad Hoc Council on Education was created in response to a deteriorating education system. The problems included children's problematic behaviors such as bullying, school violence, and truancy; psychological and physical pressure placed on students due to the excessively competitive entrance examinations; and schools' inaction in the face of problematic teachers.

Two sets of issues were identified as causes of this deteriorating state of education: issues with the whole Japanese society and the Japanese school education in particular.

[1] The reports of Ad Hoc Council of Education Reform are as follows.

Monbusho, (1985, June), The First Report on Education Reform, *The monthly journal of Monbusho*, p. 50–76.

Monbusho, (1986, April), The Second Report on Education Reform, *The monthly journal of Monbusho*, p. 27–129.

Monbusho, (1987, April), The Third Report on Education Reform, The monthly journal of Monbusho, p. 4–91.

Monbusho, (1987, September), The Forth Report of Education Reform (Final Report), The monthly report of Monbusho, p. 8–49.

See also, Monbusho, (1989), Japanese Government Policies in Education, Science and Culture 1989, http://www.mext.go.jp/b_menu/hakusho/html/hpae198901/index.html

4.3.2 Issues in Japanese Society

Japan undertook industrialization in the 1860s during the Meiji period and achieved dramatic economic growth after World War II. By 1968, Japan's GNP ranked second highest in the world. These achievements came with the economic mechanisms of mass production, mass distribution, and mass consumption. The results were people were lifted out of poverty and became wealthier; had an improved standard of living; lived in peace; had a higher standards of welfare, education and culture; had enhanced public safety; and a higher average life expectancy. In the 1970s, however, developed nations, including Japan, suffered the side effects of wealth, including environmental, resource and energy problems; the disintegration of large family units and local communities due to urbanization; and the growth of the number of nuclear families. Japan's natural ecosystems and living environments suffered damage, people's physical and emotional health declined, and stress and frustration levels increased. Furthermore, as people's values became increasingly diverse and relative, traditional values lost their influence. This weakened the unifying power in society and made it difficult for people to form close interpersonal relationships and connect with nature. These pathological and sociocultural phenomena had an enormous impact on children's lives.

In the twentieth century, Japan successfully adopted the science and technology industries that were the fruit of Western developed nations' research and development efforts. After becoming the nation with the world's second largest economy, Japan found itself needing to explore new scientific and technological creations. This marked Japan's transition from following the model of Western countries' industrialization to setting its own goals without a model.

On the other hand, the growing tide of internationalization required Japan to work with foreign countries to deal with global issues shared across national borders, including international economic issues and environmental problems. This meant that Japan could no longer focus only on its own interests in international settings, as it had from the Meiji period until the post-war economic growth period. The country now needed to actively contribute to international peace and prosperity and help solve various problems across the globe.

Moreover, advances in information technology resulted in a transition from conventional hardware to software, which involved further development of information technology, AI and integrated systems. This change indicated an individual's ability to process information, make choices, and share information would rise to a higher level of importance. This technological progress fundamentally changed the systems to produce, distribute and consume knowledge, information and technologies in both education and research. This change led to the need to nurture intellectual, productive, creative and emotionally-healthy individuals, rather than those with standardized skills and intelligence.

As these facts indicate, Japan's education reforms launched in the 1990s also involved efforts to keep up with the maturation of society, internationalization, and advances in science and technology, which were all phenomena shared across

developed countries in the 1970s and 1980s. The reforms also aimed to transition the country from the age of pursuit of the Western model to the future-oriented, creative society geared for international services. The education reforms were also expected to adjust to the rapid changes that the whole society was undergoing. Hence, it was essential to clearly define the actor of the reforms and their specific responsibilities to ensure coordination between society and the education system.

4.3.3 Issues with Japan's Education System

The following two problems were identified as the major contributing factors to Japan's deteriorating education system: (a) Excessively competitive university and high school entrance examinations and "cramming-style" education that focused on rote learning; (b) The inflexible, standardized educational approaches and the non-transparent culture of the education system which leads schools and the board of education to conceal 'bad news' from the outside world. For example, a school will generally not disclose the existence of bullying.

After Japan adopted the modern school education system in 1872, school education thrived rapidly due to people's enthusiasm for education and growing national income. In the 1980s, the high school enrollment rate reached ninety-four percent and the college enrollment rate reached thirty-seven percent. The improvement in equality of educational opportunity for public and higher education served as the driving force of Japan's economic growth. To achieve society's goal of catching up with Western developed countries, school education focused on teaching science, technology, and other knowledge from the Western countries. This led to standardized learning approaches centered on the "cramming-style" rote learning.

The excessive competition in entrance examinations further drove the education system to focus on rote learning. Before World War II, government agencies and major corporations favored employees who were alumni of specific universities and determined their employees' salaries and benefits according to their educational backgrounds. This school record-oriented employment favoring alumni of specific elite universities remained after the war. Major corporations had "designated school systems" in which they gave preference to job applicants from prestigious universities. While the college enrollment rate was rising, competition for admission to these prestigious universities became increasingly intense because of the preferential treatment given to job applicants from those universities. University entrance examinations in Japan tend to focus on scores that applicants have obtained in academic achievement tests in order to maintain objectivity and fairness in the selection process. Hence, applicants needed to achieve high scores in entrance examinations to be accepted at prestigious universities. This fact prompted high school education to adopt rote learning as an approach to score high in university entrance examinations. The competition for admission to prestigious universities led to competition among junior high school students aspiring to enroll at prestigious senior high schools. Competition in entrance examinations took hold of students in their early

teens. This fierce competition took away the joy of learning and the time to have fun with friends and families from children, which had serious adverse effects on children's physical and psychological development. The negative aspects of industrialization in the modern world also had a negative impact on children's psychology. The excessive competition in university and high school entrance examinations overly distressed students, including much younger children, physically and psychologically. These factors were believed to have caused emotional disturbances which led to problem behaviors, including bullying.

The Ad Hoc Council on Education emphasized the importance of helping children develop their creativity and ability to think and express themselves. The Council stated that these were the qualities and abilities needed to handle rapid changes in society with flexibility and a positive attitude. It proposed that schools should teach students to apply the knowledge and information they acquired to their own thinking processes, creative efforts, and self-expression because Japan would need more creative talent with individuality in the twenty-first century.

The Council developed the following proposal to prepare students for the twenty-first century:

- Set clear goals for school education and change teaching content in order to help children develop their qualities and abilities as the foundations of their lifelong learning, which will lead to twenty-first century education
- Adopt diverse assessment approaches that value children's individuality
- Implement reforms in the university and high school entrance examinations so that applicants' abilities are evaluated on multiple dimensions
- Establish a framework for responsibility in school education and coordination with society

The conventional approach of teaching content and methods was not the only issue the Ad Hoc Council on Education's report raised as the problem in Japanese education. The report severely criticized the secretive nature of Japanese schools in their preference for concealing problematic information such as that pertaining to bulling, use of physical punishment by teachers, sexual harassment by teachers and the line, which hindered early detection of the deteriorating education system and damaged public trust in schools and teachers. To provide a solid twenty-first century education, it was vital to establish responsible and trustworthy educational administrative systems and school management systems.

The report also stated that the government should review the rigid authorization, standard and guidance system by the national and local government and promote deregulation. The goal of these efforts was to eliminate excessive standardization, unnecessary focus on details and the exclusive nature of schools; all of which characterized educational administration in general. These reforms would encourage creative approaches in the classroom and dynamic teaching that would value children's individuality. The Council also proposed that schools as education providers and municipal boards of education should act more autonomously, independently and responsibly and take initiative in order to ensure their freedom, autonomy and self-reliance. Hence, a basic outline of education should be compiled from the

National Curriculum Standards and other requirements specified by the national government, and more options should be offered to schools and the boards of education. This would encourage schools and boards to act at their own discretion in developing various systems and trying new approaches.

In Japan's educational administrative system, the local board of education has authority and responsibility over school education. The Council's report criticized the boards of education for lacking the necessary sense of responsibility, mission, autonomy, initiative, and vision for twenty-first century education. The report identified the reason for the inaction was a lack of awareness that the boards should act on their own initiative and responsibility. This was attributed to the deep-rooted mindset of educators that school education was granted by the national government, even in the post-war period when local governments became the major actors of education. The report also stated that educational institutions and school educators tended to regard each other as family. This meant they favored the exclusive nature of schools that kept problems hidden and unresolved under the guise of "educational considerations". They also waited for upper echelons to make decisions and give them instructions so they would do nothing different than others. They valued the stability and continuity of education. For these reasons, the institutions and educators were not likely to change.

As specific measures to revitalize the boards of education, the Council proposed to improve the selection and training of members; establish a framework for responsibility for complaint handling procedures; take proper action to handle incompetent and problematic teachers; and coordinate with the governor and mayor's offices. It also proposed establishing a framework of responsibility for school management and ensuring principals fully exercise their leadership.

The Council stated that the decentralization of the educational administrative system and school management system, along with the establishment of a framework of responsibility, was key to Japan's efforts toward twenty-first century education.

4.3.4 Recent Issues in Japan

The Ad Hoc Council on Education in the 1980s identified problems in Japan's education at the time and proposed a direction for educational reform. However, modern Japanese society is considerably different from that of 30 years ago. Nevertheless, the Council for the Implementation of Education Rebuilding, which was established in 2013, identified the same problems as the Ad Hoc Council 30 years prior and proposed the government continue the educational reforms toward twenty-first century education. The agenda of the 2013 Council included reforms in curricula, educational administrative systems, university entrance examinations, and partnerships between schools and local communities.

The following sections examine to what extent the reforms for twenty-first century education have been implemented since the 1980s, their outcomes, and what

reforms are currently in progress. This includes reforms in curricula, university entrance examinations, educational administration, school management, and the reform of the National Assessment of Academic Ability.

4.4 Curriculum Reforms

Japan has National Curriculum Standards that specify requirements for curricula. MEXT revises them almost every 10 years. The National Curriculum Standards establish the legal framework of duties and responsibilities to maintain a level of education prescribed for elementary, junior high and senior high school education. It covers general requirements for curricula, objectives, teaching content for each subject, key points of teaching, time allocation and course structure on a subject by subject basis. Examining the revisions to the National Curriculum Standards helps demonstrate how twenty-first century education is implemented in the framework of a school curriculum.

4.4.1 Reforms in the 1990s

MEXT revised the Courses of Study to incorporate the proposals by the Ad Hoc Council on Education in order to prepare Japan's school education for the twenty-first century. The revised National Curriculum Standard was implemented from 1992 to 1994.[2] The National Curriculum Standards in the 1990s emphasized the importance of "viewing children's academic performance from a new perspective." This meant educational guidance should motivate children to learn independently and help them develop the qualities and abilities to think, judge and express themselves. In other words, the revised Standard were designed to help children voluntarily identify problems and take initiative in thinking, judging and expressing themselves. Therefore, teachers were encouraged to adopt teaching approaches which focused on children's individuality, hands-on learning and problem-based learning. National and municipal projects were launched to provide workshops for teachers, prepare documents which explain the pedagogy of the new approach, and offer models of teaching at model schools designated for pedagogical research. All of these efforts were to promote school education based on the "new perspective on academic ability." Another initiative was the introduction of the new subject, "life

[2] National Curriculum Standards Database (2014), National Institute for Educational Policy Research

https://www.nier.go.jp/guideline/h01e/index.htm
https://www.nier.go.jp/guideline/h01j/index.htm
https://www.nier.go.jp/guideline/h01h/index.htm

environment studies", to first and second graders in elementary schools. However, while some schools effectively implemented the new approach, many schools had difficulty making the transition from a teaching style focused on the acquisition of knowledge to the application of knowledge. MEXT revised the National Standard Curriculums to address this challenge in the 2000s.

4.4.2 Reforms in the 2000s

The National Curriculum Standards developed in the 2000s[3] took further steps to achieve the purposes of the curriculum reforms in the 1990s. It stated that children in the twenty-first century need to acquire "a zest for life". In order to foster this zest for life, "Period of Integrated Study" was introduced to cultivate competencies to think, make judgement, express and act by oneself through cross-curricular and project-based learning. Additionally, teaching content allotted to each subject were reduced to make time for students to think and study by themselves. The National Curriculum Standards in the 2000s represented a shift from a teaching style focused on helping students cram for exams to helping students acquire the ability to learn and think independently. The Curriculum Standards stated that school education would focus on helping children develop "a zest for life" built upon "the qualities and abilities to find issues, learn and think on their own, use their initiative in making decisions and taking action and find better solutions", "a sense of true humanity that encompasses self-discipline, the ability to cooperate with others, empathy and emotional health to let external events touch their hearts" and "the health and stamina to stay resilient throughout the life."

The National Curriculum Standards listed several examples of themes for the newly introduced "Period of Integrated Study," such as international understanding, information and the environment. Schools were allowed to freely decide what to do during the class hour according to their students' interests, and thus the Standards did not dictate a particular content or pedagogy for this period. Schools were encouraged to engage students in integrated studies by actively introducing learning activities for: problem-solving in cooperation with others; using written or visual materials to express their views and opinions; outdoor activities in natural settings; volunteer activities; arts and crafts; observation and experiment; and hands-on learning such as research tours.

These curriculum reforms did not develop smoothly. The reforms in the 2000s introduced a five-day school week, which resulted in a reduction in the overall

[3] National Curriculum Standards Database (2014), National Institute for Educational Policy Research

https://www.nier.go.jp/guideline/h10e/index.htm
https://www.nier.go.jp/guideline/h10j/index.htm
https://www.nier.go.jp/guideline/h10h/index.htm

number of instructional hours. Since schools also had to adopt new hours for integrated study, hours for other subjects including mathematics, science and Japanese were reduced by 15%. In addition, teaching content decreased by 30% in order to give students a time to study by themselves.

The dramatic reduction in the content of curricula resulted in a decline in children's academic performance. The public severely criticized the reduced instructional hours as "*Yutori* (relaxed) Education" that would weaken the basis of Japan's strength. "The Period of Integrated Study" was also criticized as a part of "*Yutori* Education" that led to the decline in academic performance. Moreover, in the PISA 2003 and 2006, the ranking of Japanese students' scores for reading performance dropped to 14th and 15th place from the 8th in 2000, and the scores for mathematics dropped to 6th and 4th place from 1st in 2000. The media reported the results as "the PISA shock," and the public strongly demanded the "*Yutori* Education" be abolished. The criticism was connected to Japan's sluggish economy during the period called "the lost two decades" that came after the collapse of the "bubble economy" in the 1990s. In 2010, China's GDP ranked 2nd and Japan's GDP fell to 3rd place. With the rise of other emerging economies, the Japanese public was deeply concerned that Japan might be losing its global competitiveness. The criticism of "*Yutori* Education" led to the revision of the Courses of Study in the 2010s and the introduction of the National Assessment of Academic Ability. Yet, this period did not set back the general direction towards twenty-first century education.

4.4.3 Reforms in the 2010s

Following the severe criticism of the National Curriculum Standards in the 2000s, MEXT made partial amendments in 2003. The partial amendments were mainly to allow textbooks to include content not stated in the Curriculum Standards Courses, since the content of textbooks had declined by 30% compared to the previous one. The full amendments were made in the 2010s.

The National Curriculum Standards were revised in the 2010s in accordance with reports by the Council for Education Rebuilding established in 2006 on the initiative of the Prime Minister and reports recommended by the Central Council for Education at MEXT based on the Education Rebuilding Council's reports. The Education Rebuilding Council's report in 2007[4] stated that Japan's school education faced extremely serious problems and that it was not an exaggeration to say that public education was in dysfunction. These problems included children's declining academic ability, bullying, truancy, school violence, school education without leadership, and the lack of a sense of responsibility at schools and boards of education. The report also pointed out that since these problems had already been raised

[4] Education Rebuilding Council (2007, January 24), Education Rebuilding by Society as a Whole-First Step toward Rebuilding the Public Education System,- First Report, Cabinet Secretariat. https://www.kantei.go.jp/jp/singi/kyouiku/houkoku/eibun0124h.pdf

20 years ago, school education was losing trust from children's guardians and the public.

The Council's report made the following proposals regarding the curricula: (a) Review *Yutori* Education to give priority to help children acquire a solid foundation of learning, including basic reading, writing and mathematical ability, especially in compulsory education, and increase the class hours by 10%. (b) Aim to help children learn to apply the knowledge they acquired. The Central Council for Education recommended detailed measures based on this report.

The report stated that it would always be important to help develop the basic foundations of learning for the twenty-first century and foster children's qualities and abilities to find issues; learn and think on their own; use their initiative to make decisions and act based on the decisions; and find solutions. What was equally important for children was to develop a "a zest for life" which encompassed the ability to cooperate with others, empathy, a sense of true humanity, health and stamina. As for academic ability, the report emphasized the importance of helping children acquire all three elements of academic ability, namely knowledge and skills; the ability to think, judge and express; and motivation to learn. Japan's education should overcome the conflict between "*yutori"* (the twenty-first century education for knowledge application) and "rote learning" (the twentieth century education for memorization of knowledge). The discussion also referred to international education movements, including the key competencies the OECD put forward as qualities people need to develop in a "knowledge-based economy" and the idea of education suggested by the United Nations for sustainable development.

In 2008 and 2009, MEXT revised the National Curriculum Standards[5] on the basis of the report by the Central Council for Education to specify the following: (a) Aim to further foster "a zest for life" of children. Help them acquire and apply knowledge and skills and develop the ability to think, judge and express themselves independently (the twenty-first century academic proficiency); (b) Increase instructional hours at elementary and junior high school by 10 percent to expand teaching content; (c) Slightly decrease hours for the "Period of Integrated Study," yet maintain it and develop it as a part of curriculum.

[5] National Curriculum Standard Database, National Institute for Educational Policy Research,

https://www.nier.go.jp/guideline/h19e/index.htm
https://www.nier.go.jp/guideline/h19j/index.htm
https://www.nier.go.jp/guideline/h20h/index.htm

4.4.4 Reforms in the 2020s

The New National Curriculum Standards to be implemented from 2020 to 2022 were announced in 2017. The revisions made for the 2020s were based on the report by the Central Council for Education in December 2016.[6] The new National Curriculum Standards are the developed version of the curriculum reforms toward twenty-first century education which began in the 1990s. The revised National Curriculum Standards feature teaching methods as well as the goal of education and teaching content.

The Central Council for Education's report stated that the National Curriculum Standards had always been focused mainly on "what teachers have to teach" and that this convention must be changed to specify "what students will be able to do and how can they learn." To make the transformation, it is vital to adopt the perspective of "independent and interactive in-depth learning" and active learning. This will help children to develop a deep understanding of what they learned in connection with their life and how society works; acquire qualities and competencies which will be required in their future; and continue to learn throughout their lives.[7]

Based on this recommendation, the new National Curriculum Standards[8] incorporated the following new features: (a) Descriptions of all subjects it specifies, with (i) Knowledge and skills to acquire, (ii) Skills to develop the ability to think, judge and express oneself, and (iii) Motivation to learn and the sense of humanity which should be fostered; (b) Provisions for the way classroom teaching should be improved from the perspective of independent and interactive in-depth learning and active learning as "learning methods" shared across all subjects.

While curriculum reforms in the 2000s and 2010s have been implemented, Japan improved its ranking in international academic ability assessments. For example, in PISA 2006, Japan ranked 12th, 10th and 6th in reading, mathematics and science, respectively. These rankings improved to 8th, 9th and 5th in 2009; 4th, 4th, and 4th in 2012; and 8th, 5th, and 2nd in 2015. This demonstrates that academic performance by children in Japan as measured by international standards is improving. When examining the overall results among OECD member states, Japan's total score ranked 1st in 2012 and 2015.

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[6] Central Council for Education (2016, December 21), Improvement of National Curriculum Standards for Kindergardens, Elementary Schools, Lower and Upper Secondary Schools, and Schools for Special Needs Education (Recommendation), MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1380731.htm

[7] Central Council for Education (2016, December 21), ibid., Section 1, Chapter 3 and Chapter 4.

[8] Ministry of Education, Culture, Sports, Science and Technology (2017–2018, March),

National Curriculum Standard for ElementarySchool, http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1413522_001.pdf

National Curriculum Standard for Lower Secondary School, http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1413522_002.pdf

National Curriculum Standard for Upper Secondary School, http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1384661_6_1_2.pdf

4.4.5 Curriculum Reforms and Assessment

The curriculum reforms towards twenty-first century education began in the 1980s. From the beginning, however, educators as well as the public expressed concern that education focused on knowledge application might lower students' levels of academic ability. Hence, MEXT needed to prove that the reforms would not lead to a decline in children's academic ability. Especially after the curriculum reforms in the 2000s, they were severely criticized by the public for leading the "*Yutori* Education" and were forced to examine children's academic ability and measure improvements based on facts.

Another challenge was how to assess students' ability to apply knowledge, rather than merely acquire knowledge. The OECD PISA survey played a significant role in Japan in regard to this challenge. The PISA survey aims to assess how capable children are in applying knowledge they have acquired to address different real-life issues. Educators in Japan considered the questions in the PISA 2000 survey to be a good model to assess this kind of ability.

Given this background, MEXT introduced the National Assessment of Academic Ability in 2007 to assess the outcomes and problems in the curriculum reforms.

4.5 The National Assessment of Academic Ability and Decentralization

The National Assessment of Academic Ability was launched in 2007. This was partly a response to the criticism to the revised National Curriculum Standards in the 2000s. It was also proposed as part of the structural reforms in the compulsory education system, which were triggered by the argument about the national government's subsidy for compulsory education.

Japan's compulsory education consisted of elementary and junior high school, and municipalities are responsible for establishing these schools. Public schools account for ninety-six percent of all elementary and junior high schools in Japan. This means that public schools play a major role in Japan's compulsory education. The national government subsidizes compulsory education to ensure equal opportunities for compulsory education and maintain a high level of education nationwide. Under this system, the national government covered half the costs of salaries for teachers at elementary and junior high schools across Japan. This maintained high level of salaries for public elementary and junior high school teachers everywhere in the country, enabling schools to employ teachers with solid qualifications regardless of the municipalities' financial conditions. In the 2000s, however, government-led reforms toward decentralization were in progress. The changes involved structural reforms in the national and local governments' finances, which aimed to curtail the national government's subsidies to local governments and transfer

financial resources to local governments for the purpose of promoting their autonomy. Since the national government's subsidy to compulsory education was huge, the subsidy was a primary target of the reform. As a result, the law was revised so that the national government would cover one-third of the costs of salaries for teachers at public elementary and junior high schools.

Along with discussion of the reform of the national subsidiary system, the Central Council for Education reviewed the relationship between MEXT and prefectural and municipal governments as well as subsidiary systems. In the report published in 2005,[9] they stated that the government should carry out the following structural reforms in Japan's compulsory educational system: (a) The national government would take responsibility for setting goals of the compulsory education and providing infrastructure necessary to achieve the goals; (b) Municipalities and schools would have more autonomy and responsibility as a result of decentralization; and (c) The national government would take responsibility for reviewing the outcomes of school education to ensure the quality of compulsory education. In other words, the national government would be responsible for providing foundational educational inputs (e.g., covering one-third of the costs of salaries for teachers at public elementary and junior high schools, establishing the National Curriculum Standards, etc.), municipalities and schools would implement the process (e.g., classroom teaching), and the national government would review school outcomes in order to ensure the quality of compulsory education.

The National Assessment of Academic Ability was proposed as a tool to implement the PDCA (Plan, Do, Check, Act) cycle of the structural reforms of compulsory education. It also served to check the outcome of the curriculum reforms. Since the survey was introduced as part of the reforms in compulsory education, it was conducted as a national test for students in elementary and junior high schools.

MEXT conducted the National Assessment of Academic Ability for students in sixth and ninth grades. These assessments measure students' achievements in mathematics and Japanese language. Each test consists of Sections A and B. Section A mainly asks questions designed to test students' ability to acquire knowledge, while Section B tests students' ability to apply knowledge. In 2015, the survey also began a triennial test in science. A triennial test in English will be started in 2019.

The National Assessment of Academic Ability covers all public elementary and junior high schools across Japan (there should have been a sampling survey from 2010 to 2013 but this was canceled in 2011 due to the Great East Japan Earthquake and tsunami). It has played a significant role in enabling the government to examine the progress of reforms in curricula and the compulsory education system. For example, the Central Council for Education, which proposed the revision to the Courses of Study for the 2020s, stated[10] that the results of the National Survey

[9] Central Council for Education (2005, October 26), Creating Compulsory Education in New Era (Recommendation), MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1212703.htm

[10] Central Council for Education (2016, December 21), Part 1 Section 1 of Improvement and Necessary Measures of National Curriculum Standards for Kindergardens, Elementary Schools,

coupled with international tests including PISA showed a narrowing gap between underachieving prefectures' scores and the national average. This indicates that academic achievement has improved nationwide under curriculum reforms and other efforts to improve the quality of education. This evidences strongly supports the direction of the curriculum reforms.

The National Survey also assesses educational conditions, teaching methods and students' motivation for learning. Hence, it is used for analysis to improve many areas in education policy. Furthermore, questions in Section B, which was designed to assess the ability to apply knowledge, helped to improve the quality of classroom lessons to adapt to teach knowledge application.

Since 2019, the National Survey no longer has Sections A and B and gives integrated questions to assess the ability to acquire and apply knowledge. This change is based on the new National Curriculum Standards[11] which include three interrelated pillars: "skills and knowledge", "the ability to think, judge and express oneself", and "the motivation to learn and a sense of humanity". Using the integrated questions to assess academic ability aims to help schools understand the idea of the National Curriculum Standards and the MEXT's message about the curriculum reforms.

A survey of academic proficiency that covers senior high school students is set for 2019 as a "basic assessment of academic ability for senior high school students." Unlike the National Survey for elementary and junior high school students, this survey will not be prepared and conducted by MEXT. The government will adopt tests produced by a private company that meets MEXT's requirements, and schools will choose an academic ability assessment at their own discretion. This process is expected to enable the implementation of the PDCA cycle of reviewing the outcomes of the education reforms to make improvements in senior high school education.

4.6 Reforms in University Entrance Examinations

The curriculum reforms have been in progress to enable elementary and secondary school education to develop twenty-first century skills. However, it would be difficult to provide a twenty-first century education for senior high school students preparing for university entrance examinations, as the abilities required to pass the exams are those developed by conventional twentieth century education. The college enrollment rate in Japan is over fifty percent, which means university entrance examinations heavily influence senior high school education. Therefore, a wide range of changes have been made to the entrance examination to better assess the

Lower and Upper Secondary Schools, and Scools for Special Needs Education, MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1380731.htm

[11] See 36.

ability to apply knowledge. However, as noted by various national councils for reforms in university entrance examinations, these efforts have not worked well enough. Fundamental changes to the university entrance examinations are needed to better align with the reforms for twenty-first century learning at the elementary, junior and senior high school levels.

MEXT plans to introduce further changes in university entrance examinations 2021. These changes are part of reforms in high school and university education which address integrated change in senior high school education, the selection of university applicants and university education. What underlies these changes is the awareness that university examinations still focus too heavily on how much knowledge applicants have acquired and too little on how well they apply solutions. The transition of Japan's education system to the twenty-first century will make little progress unless university entrance examinations also evolve.[12]

In 1979, Japan introduced the common primary examination administered by the National Center for University Entrance Examinations. The new examination system had a massive impact on senior high school education, particularly on what students were required to learn to pass the exams, because all public universities adopted the new system. In the 1980s, the Ad Hoc Council on Education proposed changes in the common primary examination system. Based on the proposal, the system was replaced by the National Center Test for University Admissions in 1990, and private universities also adopted this new system. Before these systems were introduced, university entrance examinations included so-called "knotty" or "tricky" questions that had nothing to do with the teaching content of senior high school education. This made high school students' exam preparation excessively difficult. The common primary examination and the National Center Test were introduced to address this overly demanding exam preparation process and to implement a system to select applicants who fulfilled the National Curriculum Standards for senior high school. Public universities, which hold two-stage selective examinations, have adopted the systems as their preliminary exams. Private universities have also adopted the National Center Test as their general entrance examinations. In 2015, 527 public and private universities (90% of all universities in Japan) used the National Center Test. As the number of applicants taking the Test has risen to 560,000 (about 80% of university applicants), the National Center Test has played an important role in the progress of reforms in university entrance examinations.

However, the National Center Test consists of fill-in-the-bubble exams to assess the knowledge and skills applicants have memorized. Hence, it will be reformed to be a "Standardized Test for University Admissions" scheduled to start in January 2021. The new standardized test is designed to evaluate applicants' "knowledge and skills" and "ability to think, judge and express themselves." While the National Center Test was a set of fill-in-the-bubble exams, the new test will also include

[12] See, Council for Reform on the System of Articulation of High Schools and Universities (2016, March 31), The Final Report by the Council for Reform on the System of Articulation of High Schoolsand Universities, MEXT. http://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afieldfile/2016/06/02/1369232_01_2.pdf

short-answer questions. Moreover, fill-in-the-bubble exams will be designed to assess not only applicants' memorized knowledge but also their ability to think and make decisions. The new standardized test in 2021 is expected to have a significant impact on senior high school education and promote the progress of twenty-first century education.

4.7 Decentralization of Education and Maintenance of Education Standards

A twenty-first century education should help students become individuals who view society and the world from a broad perspective and contribute to the improvement of society and the international community. Education should foster children's qualities and abilities to face reality and become involved in society and the world. To implement education that meet this demand, it is vital for schools and boards of education to have autonomy and discipline within the framework of the school system. Autonomy and discipline will help schools and boards of education use their ingenuity to optimize their local school education.

The outline of Japanese educational system is as follows. MEXT regulates the educational system from childhood education to higher education and responsible for higher education institute. Municipal boards of education are responsible for public elementary and junior high schools, and prefectural boards of education are responsible for public senior high schools. School principals are responsible for curriculum planning and day-to-day educational activities, which provides schools with autonomy and discipline in a wide range of areas.

However, the prefectural boards of education have a strong influence on education at public elementary and junior high schools because prefectural governments cover all costs of salaries for teachers at municipal elementary and junior high schools, and they also have the authority to manage personnel affairs at municipal schools. Moreover, because the subsidies of the national government to compulsory education cover one-third of the personnel costs of teachers at public elementary and junior high schools (prefectural governments paid the remaining two-third), educators tend to adhere to the education standards set by the national government. In other words, educators were excessively conscious of the national policy and preferred to stick to it. In addition to this culture, many educators believed that following the state policy and standards would make it easier for them to ensure accountability to children's guardians and avoid criticism.

The education reforms launched in the 1980s toward twenty-first century education also made changes to the education system in order to transfer authority and responsibility to schools. The transfer started from the national government to prefectural governments and then to municipalities and schools. However, these reforms also faced difficulties due to the attitudes deeply rooted in the educational world.

Further, allowing schools and local governments to have autonomy generated educational gaps between regions. Several systems were introduced to narrow these inter-regional gaps. The National Assessment of Academic Ability was launched as a system for reviewing the effects of education. Additionally, the School Management Council System (Community Schools) was designed to encourage local communities to participate in school management to ensure the quality of education in their region.

The school evaluation system was proposed by the Central Council for Education[13] in MEXT and the National Commission on Educational Reform[14] in the Cabinet Office. Since 2002, it has been a system for schools to ensure the quality of education to a variety of stakeholders. In 2006, provisions were added to the School Education Act to establish it as a legal system. The provisions specify the following: (a) Schools are required to self-evaluate their educational activities and school management and publish the results; and (b) Schools are required to make an effort to conduct a third-party evaluation by children's guardians, local residents and other people related to schools and to publish the evaluation results. Active publication of the school information was also prescribed.

Schools are required to set their goals for education and launch educational activities aligned to the goals for twenty-first century education specified in the National Curriculum Standards. They also need to self-evaluate the progress of their efforts toward the goals and publish the evaluation results. Schools which adopt a third-party evaluation will have an extra evaluation to conduct, and the results must be published as well. The school evaluation system aims to help schools review their educational activities and management to guide improvements. It is also expected that schools, children's guardians and local communities share the goals of education so that they will work together to enhance the quality of education.

The School Management Council is a system that provides children's guardians and local residents an opportunity to become involved in the development of basic policies on school management and teacher personnel affairs. It was established as a legal system in 2004 on the basis of proposals by the Cabinet's National Commission on Educational Reform[15] and MEXT's Central Council for Education.[16] The system became a legal obligation in 2017. The School Management Council at each school consists of children's guardians and local residents. The functions of

[13] Central Council for Education (1998, September 1), Local Education Administration in the Future (Recommendation), MEXT. http://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afieldfile/2013/12/18/1342455_1.pdf

[14] The National Commission on Educational Reform (2000, December 22), Report by the National Commishion on Educational Reform – 17 Proposals for Changing Education, Cabinet Secretariat. https://japan.kantei.go.jp/education/report/pdfs/report.pdf

[15] The National Commission on Educational Reform (2000, December 22), Report by the National Commission on Educational Reform – 17 Proposals for Changing Education, Cabinet Secretariat. https://japan.kantei.go.jp/education/report/pdfs/report.pdf

[16] Central Council for Education (2004, Narch 3), School Management in the Future (Recommendation), MEXT. http://www.mext.go.jp/component/b_menu/shingi/giji/__icsFiles/afieldfile/2014/03/19/1345472_001.pdf

the Council are: (a) To approve basic school management policies developed by the school principal; (b) To state their opinion about school management to the school principal and the board of education; and (c) To state its opinion about the assignment of teachers to the board of education.

The School Management Council is expected to make schools accessible to local communities so that school management incorporates the views and opinions of local communities. This will ensure reforms toward twenty-first century education garner support and help from local communities.

4.8 Education Reform in Japan Now and the Future

Japan has been working hard to transform its education from twentieth century education to twenty-first education in these 40 years. And its reforms have brought fruitful results.

For example, "Education Policy in Japan" of OECD (2018) highly evaluates Japanese education. It states "Compare to other OECD countries Japan's education system is one of the top performers among both youth and adult population. Japanese students have among the best performance in scientific, mathematics and reading literacy in the OECD Programme for International Student Assessment (PISA). -- These excellent results are linked to an environment conductive to learning in schools and beyond, with a high quality of engagement by teachers and strong support from families for effective delivery of well-rounded (holistic) education."[17]

On the other hand, the OECD report also pointed out that "this transition may require adaptation of the curriculum, teaching and school practices and of student assessments, such as university entrance examination"[18] and recommends that to "Prioritize the curriculum reform through a strategy that sustain alignment across interdependent components and communicate its value to stakeholders. This includes adapting existing assessments to reflect the new curriculum and investing in teachers' training and initial teacher education to reinforce their capacity to adapt their practices to the revised curriculum."[19]

It also recommends that to "Preserve the provision of well-rounded holistic education by enhancing school organization and school-community partnerships. Review the role and training of school leaders in light of 2030 objectives. Focus on management practices and partnerships with local communities on supporting the introduction of the new curriculum and alleviating teacher's workload."[20]

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[17] OECD (2018), *Education Policy in Japan: Building Bridges Towards 2030*, Reviews of National Policies for Education, OECD Publishing, Paris, p. 15. https://doi.org/10.1787/9789264302402-en

[18] OECD (2018), ibid. p. 16.

[19] OECD (2018), ibid. p. 17.

[20] OECD (2018), ibid. p. 17.

I think these recommendations are to the point. Japanese education reform has been carried out as a part of social transition of Japanese society, from twentieth century-style society to twenty-first century-style society. That is the reason why its discussion has been involving not only education world people but also wide range of society including parents, local community, business and labor community. And to maintain and enhance school-community partnership and discussion among all stakeholders should be the 1st priority for the successful advancement of education reforms.

As for the individual school education, many Japanese schools are referred to as a model of twenty-first century education. For example, Andreas Schleicher features a lesson in Hiroshima Nagisa High School in Japan as a carefully designed creative leaning time.[21] He also describes Kosen School in Japan as a very successful case to develop cross-curricular capabilities through their unique blend of classroom-base and hands-on project-based learning.[22] N High School in japan was invited by OCCAM's Infopoverty World Conference as a new school that uses ICTs to provide high quality education at a low cost and post-graduation opportunities.[23]

On the other hand, the OECD report also pointed out that "The magnitude of the (curriculum) reform should not be minimized" "there are risks that proactive, interactive and authentic leaning may be adapted only as superficial change"[24] as a challenge of Japanese education reform. I think this is a very important point. Curriculum reform is a starting point. How to implement is a further important and difficult task. Schools and teachers are expected to play the leading part. Twenty-First century education expects students to attain competencies and skills to think, make judgement and act by themselves. Also, each school should be a twenty-first century education school. That is schools should recognize how they can cultivate competencies and skills of their students to lead better life and interact with society and the world. And based on their recognition, think, make judgement and express (implement twenty-first century education) by themselves. Education system should support efforts of each school and teacher to become a main player.

[21] Schleicher, A (2018), *World Class: How to build a twenty-first-century school system,* Strong Performers and Successful Reformers in Education, OECD Publishing, Paris. p. 103. https://doi.org/10.1787/4789264300002-en

[22] Schleicher, A (2018), ibid., p. 242.

[23] The Observatory on Digital Communication (OCCAM) (2019, April 12), XIX Infopoverty World Conference Final Declaration, OCCAM. http://www.occam.org/news/xix-iwc-final-declaration/

[24] OECD (2018), *Education Policy in Japan: Building Bridges Towards 2030*, Reviews of National Policies for Education, OECD Publishing, Paris, p. 157. https://doi.org/10.1787/9789264302402-en

References

Ad Hoc Council on Education. (1985, June). The first report on education reform. *The Monthly Journal of Monbusho*. pp. 50–76.

Ad Hoc Council on Education. (1986, April). The second report on education reform. *The Monthly Journal of Monbusho*. pp. 27–129.

Ad Hoc Council on Education. (1987a, April). The third report on education reform. *The Monthly Journal of Monbusho.* pp. 4–91.

Ad Hoc Council on Education. (1987b, September). The forth report of education reform (Final report). *The Monthly Journal of Monbusho*. pp. 8–49.

Central Council for Education. (1998, September 1). Local Education Administration in the Future (Recommendation), MEXT. http://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afieldfile/2013/12/18/1342455_1.pdf.

Central Council for Education. (2004, March 3). School Management in the Future (Recommendation), MEXT. http://www.mext.go.jp/component/b_menu/shingi/giji/__icsFiles/afieldfile/2014/03/19/1345472_001.pdf.

Central Council for Education. (2005, October 26). Creating Compulsory Education in New Era (Recommendation), MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1212703.htm.

Central Council for Education. (2008, January 17). Improvement of National Curriculum Standards for Kindergartens, Elementary Schools, Lower and Upper Secondary Schools, and Schools for Special Needs Education (Recommendation), MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1380731.htm.

Central Council for Education. (2016, December 21). Part 1 Section 1 of Improvement and Necessary Measures of National Curriculum Standards for Kindergardens, Elementary Schools, Lower and Upper Secondary Schools, and Schools for Special Needs Education, MEXT. http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1380731.htm.

Council for Reform on the System of Articulation of High Schools and Universities. (2016, March 31). The Final Report by the Council for Reform on the System of Articulation of High Schools and Universities, MEXT. http://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afieldfile/2016/06/02/1369232_01_2.pdf.

Education Rebuilding Council. (2007, January 24). Education Rebuilding by Society as a Whole-First Step toward Rebuilding the Public Education System,- First Report, Cabinet Secretariat https://www.kantei.go.jp/jp/singi/kyouiku/houkoku/eibun0124h.pdf.

Kariya, Takehiko. (2018 December). 'Daigaku seiakusetu' niyoru monndaisettei to iu to <mondai> (<Problem> of Problen Setting as " Belief in university as fundamentaly evil") (2018 December), Chapter 2 of Part 1 of "50 nennme no 'Daigaku kaikai' 20 nenngono daigakusaisei (50th year of University dismantling, University reborn in 20", Edited by Ikuya Sato, Kyoto University Press.

MEXT. (2017–2018, March). National Curriculum Standard for Elementary School, Lower Secondary School, Upper Secondary School. http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1413522_001.pdf, http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1413522_002.pdf, http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/09/26/1384661_6_1_2.pdf.

MEXT, National Curriculum Standards Database. (1947–2017). National Institute for Educational Policy Research https://www.nier.go.jp/guideline/.

Monbusho. (1992). *Gakusei Hyakuniju nenshi* (One hundred and twenty years history of Japanese education). Tokyo: Gyousei. http://www.mext.go.jp/b_menu/hakusho/html/others/detail/1318221.htm.

Monbusho (Ministry of Education, Sports and Culture). (1989). Japanese Government Policies in Education, Science and Culture 1989. http://www.mext.go.jp/b_menu/hakusho/html/hpae198901/index.html.

OECD. (2018). *Education policy in Japan: Building bridges towards 2030* (Reviews of National Policies for Education). Paris: OECD Publishing. https://doi.org/10.1787/9789264302402-en.

Schleicher, A. (2018). *World class: How to build a 21st-century school system. Strong performers and successful reformers in education*. Paris: OECD Publishing. https://doi.org/10.1787/4789264300002-en.

The National Commission on Educational Reform. (2000, December 22). Report by the National Commission on Educational Reform – 17 Proposals for Changing Education, Cabinet Secretariat. https://japan.kantei.go.jp/education/report/pdfs/report.pdf.

The Observatory on Digital Communication (OCCAM). (2019, April 12). XIX Infopoverty World Conference Final Declaration, OCCAM. http://www.occam.org/news/xix-iwc-final-declaration/.

Chapter 5
Education Truly Matters: Key Lessons from Mexico's Educational Reform for Educating the Whole Child

Elisa Bonilla-Rius

Abstract Mexico's 2012–2018 federal administration launched an extensive educational reform whose main goal was to transform its large and complex education system, so as to prepare students to successfully face twenty first century challenges. The assumption being that, by providing them with the tools they need to succeed in this rapidly changing world, Mexico will in turn become prosperous, fair and free. It entailed rethinking the conceptualization and structure of the system, and involved profound transformations in its organizational, budgetary, technical, pedagogical and administrative spheres, with quality and equity as guiding principles. Two disruptive innovations –which steered the process– stand out: teachers' appraisals and the new national curriculum. About this curriculum, three, of several salient features, discussed in this chapter, are: its learning outcomes' structure, which effectively articulate twelve of the fifteen grades of compulsory education; the introduction, from PreK to12th grade, of socioemotional learning; and curricular autonomy as a means to achieving pedagogical innovations in schools. Unfortunately, this reform defied deeply rooted uses and habits of various stakeholders and treaded on many political interests, which resulted in a convoluted process that has threatened its consolidation. The new president campaigned against the reform. It is still uncertain what policies would continue.

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5.1 Introduction

> We are at the dawn of the fourth industrial revolution. In ten or fifteen years, robots and artificial intelligence will have decimated not only the little that is left of the industrial proletariat, but also a large part of today's desk jobs. Education will be necessary for cooking, for driving, for employment and for unemployment, for politics and for inventing new ways of living. The Mexico that I want is a country where there is one broad consensus: that *education truly matters*.[1] Lomnitz (2018)

With a new paradigm for the provision of education services by the state, Mexico's recent educational reform – the most important since 1959, when the so-called *Eleven Years Plan*[2] to universalize primary education was launched– signified a turning point in the conceptualization and structure of the country's education system. Involving profound transformations in its organizational, budgetary, technical, pedagogical and administrative spheres, with quality and equity as its guiding principles. Bringing about this transformation has been a convoluted process. However, it is a critical priority if Mexico is to allow children and young people to successfully participate and compete in the global knowledge society.

This chapter was written between January and June 2019, just after the federal administration that promoted the reform had ended. It is organized in eight sections. After this introduction, Sect. 5.2 describes the contextual factors that called for the reform agenda: the complex nature of the Mexican education system and its anomalous practices, students' unsatisfactory education outcomes, and teachers' individual and institutional challenges. Section 5.3 outlines the five key components of the New Educational Model –the core document of the reform– which was the blueprint for this performance-based reform. Section 5.4, entitled "The New National Curriculum (PreK-9)", describes the educational goals of the reform and how are they related to twenty first century skills. With the aid of cardinal documents aimed at disseminating the syllabi amongst teachers, it explains the organization of the curriculum for educating the *whole child* and the breadth of skills covered by it, as well as its pedagogical principles and some innovations, such as the introduction of socio-emotional learning and schools' curricular autonomy. Section 5.5 explains the various implementation stages as well as the role of some key stakeholders. Section 5.6 analyzes the politics of the reform. It discusses the political agreement that was needed to bring about this ambitious transformation, the support it summoned, and the resistance that arose from some groups and regions of the country. Section 5.7 looks at the reform's impact. Although it is rather early to properly evaluate the expected systemic changes, there are interesting achievements –supported by studies and surveys conducted by independent bodies and individuals– that deserve to be examined. The last section (Sect. 5.8) highlights some of the important challenges, as have been put forward by various authors.

[1] *This quote was originally published in Spanish and translated by E. Bonilla-Rius.*

[2] For further information, see Latapí (1992) and Granados (2018b).

In addition to my personal experience with the reform, I have also relied on various sources for writing this chapter, ranging from legal and official documents, research articles, newspaper and opinion pieces, written both by educators and political commentators, as well as informative texts published for teachers by Mexico's Ministry of Education (SEP).

5.2 The Context at the Outset of the Reform

Some of the most important contextual factors at play at the end of 2012, when the educational reform was launched, were the size of the education system, its' inequalities, and complexity, in addition to its' verticality, bureaucracy and dated practices, resulting in poor student learning outcomes. As Nuño[3] (2018) explained: Our education system did not evolve at the required speed. Despite very important efforts such as increasing enrollment at all levels, expanding technological education and the 1992 decentralization process, the system continued to have a structure that, in many aspects, responded better to the *old regime*: a hegemonic party, a closed economy with vertical and bureaucratic structures, that discouraged innovation and creativity in schools. Acute inequalities persisted in the system.

5.2.1 The Structure and Governance of the Education System

Mexico is a highly populated country, with over 119.5 million people (INEGI 2015), where almost half (45%) are under 25 years old. Mexico's education system is the ninth largest of the world, with 36.4 million students, two million teachers, and almost 260 thousand schools (K-12). SEP leads the system and is responsible for designing all its major policies including the national (PreK-9) curriculum. However, in 1992, the actual management of schools was decentralized to Mexico's 32 federal states.[4] The system caters to the educational needs of a large and highly diverse population: 21% of all pupils live in rural areas; 3% of students speak one of the 64 indigenous languages and are educated both in their mother tongue and in Spanish. 43% of all primary schools are multi-grade, but they service only 4.6% of total primary students, which means that they are rather small, often located in remote areas and many suffer from numerous structural shortcomings SEP (2018b).

The Mexican education system is not only large, but also quite complex. Created in the second decade of the twentieth century, it maintains its original highly vertical and centralized design. With the decentralization of schools and teachers to the

[3] During president Peña-Nieto's administration (December 2012 – November 2018), three ministers of education were in office: Emilio Chuayffet, (December 2012–August 2015), Aurelio Nuño, (August 2015–December 2017) and Otto Granados, (December 2017–November 2018).

[4] With the only exception of Mexico City which is still managed centrally by SEP.

states almost 30 years ago,[5] its verticality has slowly started to diminish, but many of the original political and administrative arrangements are still in force and they can be a real hindrance to the type of evolution that the education system needs to undertake.

Several authors (among others: Fuentes-Molinar 2013; Ramírez-Raymundo 2013; Moe 2017; Chambers-Ju and Finger 2017) have studied how, over several decades, the state's authority in education was gradually, but effectively, compromised by the yielding of power to the National Teachers' Union (SNTE)[6] which resulted in SNTE's involvement in several spheres of the system. This process, a *de facto* shared governance by the education authorities (federal and local) and the union, reached its peak in 2006, when a prominent member of SNTE was appointed to high office in SEP, as Under Secretary of State for Basic Education. The union's interference throughout the years distorted the social relations among education stakeholders, which in turn gave rise to severe aberrations within the system. The absence of accountability stands out among such irregularities. For instance, at the beginning of the reform, SEP lacked reliable statistical information, like the exact number of schools and teachers, which was vital for developing the reform policies and not least for running the country's education system. This lack of transparency had long been covertly promoted by the union, because it served its *patrimonial power,*[7] as a means to take advantage of the education budget and its political patronage. Hence, in December 2012 at the outset of the reform, a census (INEGI 2014) was conducted to accurately detail how many schools, teachers, and students truly existed within Mexico's public education system. Among other things, it was suspected there were thousands of *phantom* teachers and other irregularities on the payroll, which was later confirmed and corrected (SEP 2017c).

[5] Several experts have dealt with the benefits and shortcomings of this process of decentralization (or "federalization" as it has been labelled) but it is far from perfect. Ornelas (2003) has indicated that: "It certainly represents the alternative to bureaucratic centralism - at least it is not worse - and it offers the potential to grant legitimacy to the governments that seek it, although some resist losing degrees of control". Mancera (2010) explains how it affected the education budget.

[6] SNTE is Mexico's largest trade union (with over 1.6 million members) and it is often said that it is also Latin America's largest. It controls 31 out of 32 states, over 80% of total teachers' pay-roll. The only exception is the Union of Teachers of the State of Mexico, which is the most influential organization in that particular state, which is Mexico's most populated. The Committee of Education Workers (CNTE), the self-proclaimed "democratic" faction of SNTE, controls four states: Oaxaca, Chiapas, Guerrero and Michoacán and has a sparser presence in the rest of the country. There are other much smaller organizations, but their nature is local, and they do not have relevant political clout. (Fuentes-Molinar 2013)

[7] "Patrimonial power", is –in Max Weber's sense– a traditional form of domination in which a leader, who is not constrained by legal-rational rules, uses his power to serve personal ends. Weber (1968) as quoted by Chambers-Ju and Finger (2017). Such power originated in the corporatist ties that formed between SNTE and PRI (Mexico's ruling party for 70 continuous years). By the 2012 presidential election, PRI had not ruled for the last 12 years and SNTE did not backed PRI, President Peña-Nieto's party. Hence, those ties were no longer extant. An advantageous situation that benefited the reform.

Another widely spread anomaly, which has also been well researched (Moe 2017; Chambers-Ju and Finger 2017), is SNTE's participation in the allocation and promotion of teaching appointments. For decades, the union had leeway to hire new teachers and to be heavily involved in the advancement of teachers to higher positions. In their hands, teaching positions became expensive goods from which the union and its leaders greatly profited, financially and politically, over the years. The opacity of appointing and promoting teachers resulted in vicious and dishonest practices, like selling, renting and inheriting teaching positions. Before teachers' jobs were allocated through a competitive evaluation process introduced by the reform, the price of a teaching position in the *black-market* fluctuated, depending on rank and location, between $100,000 and $600,000 Mexican pesos, equivalent to $5000 to $30,000 US dollars.[8] Thus, for years, the selection and promotion criteria of teachers and other positions within the system were not based on merit but on cronyism. Many teachers and principals were hired and promoted not based on quality of their teaching or competency for the job, but rather on their compliance with union political requests.

Chronic teacher absenteeism was an additional dismal result of SNTE controlling teacher' jobs, which greatly impacted the quality of education. The 2012 census data analysis detected 13% of teacher payroll (298,000 teachers) as not showing up for work (INEGI 2014; *The Economist* 2014). Before the reform, SNTE had an army of teachers working fulltime for the union, but they were being paid by the state, through the schools' payroll where they were allegedly based. With the reform, the union had to start paying such salaries and therefore many teachers returned to their teaching posts.[9]

All these negative practices had abysmal consequences for the quality of students' education. Thus, the reform needed to address head on the union's political clout as well as the great number of irregularities the system had accumulated over the years. Hence, it was vital for the state to break the *de facto* shared governance and regain full control of the education system. It was a cumbersome process, many interests were crushed, and, in the regions where the National Committee of Education Workers (CNTE) –a radical faction within SNTE– controls the teachers' union, the educational reform advanced at a different rate or not at all, as a result of CNTE's opposition to the reform.[10]

[8] Speaking about the reform at a public lecture, Otto Granados –the third education minister during the reform– publicly revealed these figures and said that the decisions made within the national education system were "captured by the arrangements with SNTE". These statements were widely reported in the media: https://www.debate.com.mx/mexico/Plazas-de-maestros-se-vendian-hasta-en-600-mil-pesos-SEP-20180220-0374.html (last accessed on 26 February 2019).

[9] In order to solve the massive leak of resources from the federalized education payroll, in 2014, Congress passed the presidential initiative to centralize teachers' salaries through the Contribution Fund for Educational Payroll and Operational Expenditure (FONE). (Fernandez and Herrera 2018).

[10] In particular, four states: Oaxaca, Michoacán, Guerrero and Chiapas are Mexico's most rural states and with larger indigenous populations.

5.2.2 *Mexico's National and International Education Outcomes*

Mexico's learning outcomes, both on national and international tests, are less than satisfactory. At the national level, students have performed poorly on the various standardized tests that have been in place since the 1990s. PLANEA[11] was introduced during the reform to assess ninth grade students' performance in Spanish and Mathematics. It was administered by the National Institute for the Evaluation of Education (INEE) twice, in 2015 and in 2017, and the results were similar both times.

In the 2017 survey: 64% of students scored in the lowest performance level (level I) in Mathematics, meaning that more than six out of ten students leave lower secondary school with some arithmetic knowledge but no algebraic skills. In Spanish, 34% of all students also scored at the lowest performance level, indicating they have great difficulty comprehending and interpreting texts of medium complexity, like a daily newspaper. This suggests they will have great difficulty pursuing further studies or even finding a job that is not manual.

In contrast, at level IV, with outstanding performance, there are comparatively much less students. In Spanish, only 8% can analyze and rank in order of importance complex arguments, so as to evaluate implicit and explicit information contained in different parts of complex literary, non-fictional and argumentative texts. In Mathematics, as few as 5% can solve problems that entail the combination of fractions and decimals and as well as problems using equations to find unknown values.

In Spanish, a large number of students (40%) are at the basic level (level II). This means that they can distinguish between the structure of fictional and non-fictional texts as well as being able to make simple inferences, but only about explicit information contained in them. Their interpretative abilities are slowly starting to develop, which means that they will also encounter great academic difficulties ahead. In Mathematics (level II) there are 22% of students, which means they are able to solve problems that entail the addition, subtraction, multiplication and division of decimals. They are also able to use letters as variables to construct simple numerical relations with an unknown value. These students, however, are also likely to struggle with many of the academic challenges ahead of them.

These results also raise important issues regarding equity. For instance, in Spanish, the national mean score is 495, however in urban schools it is 507, whereas in rural schools it is 452. In Mathematics the national mean score is 497, with 503 in urban schools and 475 in rural schools. There are also very significant differences in student performance based on social background, especially parents' educational

[11] PLANEA is a standardized test administered to primary, secondary and high-school students. More about the 2017 test for ninth graders in: http://planea.sep.gob.mx/content/general/docs/2017/RESULTADOS_NACIONALES_PLANEA2017.pdf (last accessed on 26 October 2018).

attainment. The less educated the parents are, the more disadvantaged the students. Children of illiterate parents,[12] have a mean score of 398 in Spanish and 413 in Mathematics. Students whose parents only completed primary school have a mean score of 442 in Spanish and 460 in Mathematics. Those students whose parents have a university degree, tend to be top performers, with mean scores of 559 in Spanish and 555 in Mathematics.

At the international level, Mexican students have also performed poorly. Of the 65 countries who took the 2012 PISA assessment, Mexico was in 53rd place. In PISA 2015, Mexico was in 58th place out of 72 countries, with Mexican students scoring below the OECD average, with only 416 points in science, 423 in reading and 408 in mathematics. In all three domains, less than 1% of students were top performers. In fact, around one in two students (47.8% in science, 56.6% in mathematics and 41.7% in reading) are below the minimum competency level necessary to access higher education or perform well in activities that entail finding solutions to complex social and environmental problems. At the present time, when science literacy is increasingly linked to economic growth, it is necessary for all citizens, not just future scientists and engineers, to be willing and able to confront science-related dilemmas, (OECD 2018b). However, the average science performance of 15-year-old students in Mexico has not changed significantly since 2006, when science was the main domain assessed. Also, in reading, the average student performance has remained stable since 2009. In contrast, Mathematics performance has, on average, improved by five score points every 3 years between 2003 and 2015, but still remains low in comparison to other OECD countries. Mean PISA performance in Mexico is also above the mean of other Latin American countries: eight points in science, 17 in mathematics and six in reading.

Since one of the reform's main goal was to ensure school leavers would have a better and more prosperous future, these poor academic results became an important driving force. But, as it will be discussed later in this chapter,[13] the reform failed to make sufficient progress in assigning clear responsibilities of these academic results to specific stakeholders, both at the state and the school level, and, hence it did not advance in developing accountability for academic learning.

[12] Mexico's illiteracy rate has dropped from 6.2%, in 2012, to 4.1%, it is the lowest of all times. This is very encouraging for many reasons, but above all, because from now on there will be more and more children who do not have parents who are illiterate, which statistically gives them a better chance to thrive. (http://noticiasncc.com/cartelera/articulos-o-noticias/11/13/mexico-libre-analfabetismo-tasa-menor-4/

[13] See Sect. 5.7.3.

5.2.3 Teachers' Working Conditions: An Appraisal from TALIS

An increasingly widespread principle states that the quality of an educational system cannot exceed the quality of its teachers. In other words, teachers' qualifications, dispositions and working conditions are critical for students' learning. The 2013 results of OECD's *Teaching and Learning International Survey* (TALIS)[14] – which collects internationally comparable data on the learning environment and working conditions of teachers in schools around the world with the aim to provide "valid, timely and comparable information from the perspective of practitioners in schools to help countries review and define policies for developing a high-quality teaching profession"– were made available at outset of the reform and became an important input for designing reform policies.

TALIS captures information on teacher characteristics, working environments, leadership, learning and development opportunities, appraisal and feedback, pedagogical practices and beliefs, self-efficacy and job satisfaction. TALIS' key finding was that teachers in Mexico work in more challenging contexts and feel less prepared to do their work than teachers in other countries: 44% of Mexican secondary teachers work in schools where more than 30% of the students have a socioeconomically disadvantaged background. Also, more than half of Mexican teachers work in schools where the school principal reports a shortage of support personnel (60%) and of qualified and/or well-performing teachers (56%), compared with the TALIS average of 47% and 39%, respectively. Additionally, almost a quarter (24%) of the teachers surveyed reported not feeling prepared to perform their work (the third largest share of teachers in this study), compared with the TALIS average of 7%.

Furthermore, among countries participating in TALIS, Mexico had the lowest proportion of secondary teachers who reported having completed a teacher education or training program, 62%. As reported by their principal, 72% of teachers did not have access to formal induction in their institutions and 60% did not access mentoring programs, while the TALIS averages were 34% and 26%, respectively. In contrast, Mexican teachers reported a higher participation in professional development activities than their counterparts. The OECD recommendation to help Mexican teachers improve was for the education authorities "to ensure that professional development is of good quality, relevant to teachers' needs, and offers a coherent view of professional growth" (OECD 2014).

TALIS also showed that Mexico's teachers find appraisals useful to their individual practice. More than 80% of teachers surveyed reported receiving feedback on

[14] The international target population for TALIS is composed of lower secondary teachers and their school leaders in mainstream public and private schools. In Mexico, 3138 lower secondary teachers and 186 principals from 187 schools were randomly selected for the study and to complete the paper and online TALIS questionnaires. (OECD 2014). Mexico participated for the first time in TALIS in 2013.

their teaching following analysis of their students' test scores and observation of their classroom teaching. In contrast, fewer teachers across TALIS countries report receiving feedback via these methods (64% and 79%, respectively). Moreover, Mexican teachers have largely positive views on how feedback has helped them improve their practice.

Mexican school principals reported having little decision-making capacity relative to teachers in their schools. In general, compared with the TALIS average, a lower percentage of principals in Mexico reported having considerable responsibility for school-related tasks. Such tasks included appointing or hiring teachers (16%, TALIS average is 39%), dismissing or suspending teachers (14%, TALIS average is 29%) and establishing teachers' starting salaries and pay scales (6%, TALIS average is 14%) and teachers' salary increases (8%, TALIS average is 18%). In this case, the OECD recommendation was to "grant greater autonomy to schools" and to "provide more support and capacity building to help school principals succeed" (OECD 2014).

As will be discussed later in this chapter –in Sects. 5.3 and 5.4– the reform included the professional development of teachers and school principals (SEP 2017), as well as granting autonomy to schools (Treviño and Velasco 2018).

5.2.4 Universal Coverage of Services and the Extension of Compulsory Education

Throughout the twentieth century Mexico struggled to achieve universal coverage of basic education but, by 2012, when the reform was announced, coverage was no longer the issue it had been in the past decades. Education authorities were therefore able to shift their focus from increasing access to improving the quality of education services. In 2012, with only 66% of pupils enrolled in high school, the pressure for universal coverage had shifted to the upper secondary school level. That year, compulsory education was extended, to include high school, up to age 18. This legal reform spurred high school enrollment and, by 2018, it had increased almost 19 percentage points, to 85% (Ortega 2018). The overall growth of the coverage rates also impacted the schooling average, which had risen in the prior few years to 9.5 grades.

5.3 Key Dimensions of the Mexican Reform

5.3.1 A Performance-Based Reform

Mexico's education reform of 2012 belongs, conceptually, to the performance-based institutional reforms. Reformers strove to distinguish this reform from earlier reforms which were more concentrated on the expansion of services and less

focused on students', teachers' and institutions' performance. According to Moe (2017), these earlier education reforms belong to a historical period that corresponds to the emergence and institutionalization of major public institutions geared to delivering public services to ordinary citizens. Hence, they

> …had little to do with the systems' academic performance… academic quality was not [their] main issue. Simple service-provision was". [Thus, they relied on …] an array of constituencies with vested interests –notably, teachers and bureaucrats, … as well as politicians and local leaders who used education's vast sums of public money for purposes of patronage and simple corruption. [In contrast, …] performance-based reform is the new normal, even in nations such as Mexico and India where patronage and corruption are rampant, and the school systems remain very poorly developed. (Moe 2017).

The reason being that children need to be academically empowered if they are to perform effectively in the knowledge economy. Thus, *attaining quality education for all* became the propelling force of this reform (SEP 2018a). To achieve such quality, the acute inequalities within the system would need to be removed and a new form of organization and operation erected. Without deeply restructuring the system, achieving quality in education would never be attainable. In this regard, the *Educational Model for Compulsory Education: Educate for Freedom and Creativity* or NME, (SEP 2017), the core document that charted the Mexican reform, identified *five dimensions* that needed to be address in order to achieve the full transformation of the education system.

5.3.2 First Dimension: Develop a New Curriculum

The curriculum was deemed to be the reform's compass and the blueprint for educating students for the challenges they will face in the twenty first century. It entailed a massive curricular reform that involved rethinking education, from the early years up to the end of high school. It produced three normative documents which were prepared separately by two of SEP's undersecretaries,[15] but in coordination and with a common pedagogical approach. These documents are:

Starting out Right Is the education program for the early years (from 0 to 3), known in Spanish as *Un buen comienzo* (SEP 2017e). This curricular reform included, for the first time, early childhood education as a fundamental part of a student's educational trajectory. It regarded the first 3 years of life as a critical period for both, enhancing the physical, cognitive and emotional development of children, as well as for preparing them to enter and succeed in school. Early childhood education has endured a long process to be recognized and valued as an integral part of the education system, but it still faces several challenges. First, the recognition of babies and young children as subjects of rights and as competent learners. Second,

[15] The first two documents were developed at the Undersecretary for Basic Education and the latter at the Undersecretary for Upper Secondary Schools.

the need to stop regarding the attention given to children –under the age of three– as the exclusive right of the working mother, in order to strengthen the fundamental right of the child to receive education and care from birth. Last, but not least, the need to articulate the efforts of several separate institutions and social organizations that offer early childhood education and other services grounded on the educational rights of children perspective.

Key Learnings for Educating the Whole Child Known in Spanish as *Aprendizajes clave para la educación integral* (SEP 2017b), is the national curriculum for grades K to 9. Sect. 5.4 analyzes the development and particularities of this curriculum, which is compulsory at the national level.

Shared Curricular Framework Known in Spanish as *Marco curricular común* (SEP 2017f). The curriculum for the last three grades of compulsory education (grades 10–12), known as *Upper Secondary Education*, is not national. It is defined both at the regional and institutional levels, and thus is not the sole responsibility of SEP. By law, other bodies –like the states, some universities and even private entities– can advance and enact curricula for this educational level, which is comprised by over 30 academic and vocational subsystems. As part of the reform and as an attempt to articulate these subsystems, SEP built this competence framework and launched an initiative to create a National Baccalaureate System (SNB), which is still in development, (Ortega 2018).

5.3.3 Second Dimension: Place Schools at the Center of the System

The reform's motto: *Place schools at the center of the system* meant that, in order to confront the system's bureaucratic ways, the education system needed to *be turned upside down*, so that all its components –and foremost the education authorities– would work to the schools' benefit. For years, Mexican schools were the last and weakest link in the education chain: Schools, rather than concentrating on pupils' education, had to respond to various external demands from local education authorities, often unrelated to the real needs of school operations. Precious time for learning was wasted doing other assignments.[16] Thus, for the reform to succeed, it was of the utmost importance to shift the education system's focus onto the learners. This was done by a management strategy that placed schools *at the center of the system*, which meant focusing the attention of local education authorities, supervisors and

[16] Principals would spend a great deal of time on administrative meetings and paperwork, teachers would be demanded to fill-in endless formats with data that was later not read nor analyzed, and students learning time would be diverted to participating in a great number of programs of questionable educational nature, organized by several extra school organizations with little regard for the students' academic performance.

school communities on pupils' achievement. Focusing on learning seemed the obvious choice for schools, however it took them –and the whole system– great efforts to start changing old ways.

To improve the quality, equity and relevance of educational services, schools needed to be granted autonomy. Thus, the decision-making capacities of school communities (principal, teachers, students, and families) were legally expanded. Schools were granted more autonomy to improve operations, through the optimal use of classroom time and material resources, the professionalization of teaching staff, the promotion of collegiate work, and the involvement of parents in their children's learning.

The education reform gave the highest priority to ensuring that each school: had a consolidated governing body to exercise school autonomy in an effective manner, received adequate support from supervisors in decision-making processes, implemented support mechanisms with educational authorities, parents and society, and addressed the shortcomings of its physical infrastructure (Treviño and Velasco 2018).

The Technical Assistance Service for Schools (SATE) was created with the aim of ensuring the advice and support all schools need to effectively manage their newly granted autonomy. SATE was conceived as a team of professionals focused on providing good pedagogical support to the school, because the implementation of school autonomy also required that the school-supervision link evolved, from its traditional administrative functions, to reinforcing the technical-pedagogical function of supervisors and thus becoming an affiliation among education professionals. Thus, all supervisors (18,000) underwent an intensive training that lasted 18 months and was very well received by them. The training strategy, based on peer learning, provoked supervisors to reflect on their role and to strengthen their capacities to provide technical assistance for school improvement. (Treviño and Velasco 2018).

5.3.4 Third Dimension: Reorganize Teachers' Professional Careers

Improving the quality of teaching should be the priority of every education system. The assumption being that in order to improve learning, teaching had necessarily to be improved and it needed to be done through the professionalization of the teaching career. Thus, the third dimension of NME policies was founded on the central tenet that *teachers' proficiency sets the limit to what students can learn in schools* and therefore a rather new concept in the Mexican context was introduced: *merit*. According to these policies, which stemmed from the Teachers Professional Development Act, progress along a teacher's career path –including hiring, in-service certification, and promotion– was to be based on merit. To lure better candidates into the teaching profession, the *Professional Teaching Service* (SPD) was created.

According to De Hoyos and Estrada (2018), the SPD design incorporated many of the best international practices: appraisals for enrolling and promoting of teachers, induction period, continuous in-service training and incentives for good performance. These authors conducted an extensive statistical study comparing the high-school performance (on reading and mathematics) of teachers with the performance of the rest of the population that finished high-school, comparing the data for 55,189 teachers who started teaching between 2012 and 2017. Their preliminary results show that Mexican teachers, enrolled from 2014, are better qualified than the rest of the population that studied high school. This date coincides with the beginning of SPD and the use of appraisals to hire teachers.

Most of the efforts of the reform in this third dimension were focused on the reorganization of teachers' career path and their training, but it was also the most controversial of the reform's policies (Reimers 2018). First and foremost, the new mechanisms, based on teachers' appraisals, threatened multiple political and economic interests. Further, the consequences of a policy based on merit were neither well anticipated, nor were the benefits well communicated to teachers and the general public. Hence, the dominant narrative, fueled by the media, labelled the reform itself as a *punitive exercise*. The argument was that evaluating teachers and using merit to select, certify, and promote them was disrespectful and vindictive to teachers and graduates of teaching training colleges; it implied that the government blamed teachers for all of the system's ills. The dissenting leaders of CNTE and the first education minister during the reform engaged in antagonistic arguments, mostly about teachers' appraisals, that went on for months and were widely disseminated in the media. For instance, in June 2015, one of CNTE's leaders accused the minister of "…assuming an arrogant, pedantic and rude attitude […] to try to submit [them]".[17] As if he wanted to prove the leader right, the minister answered back: "Regardless of *rain or thunder*, teachers will be evaluated".[18]

Nevertheless, not all teachers opposed the reform. On the contrary, many welcomed the possibility to enter the teaching profession as a result of their own merit and thus backed the consolidation of the SPD. The great number of graduates and teachers that willingly entered the appraisal processes revealed their support to the SPD. According to SEP's figures (Granados 2018b), in the academic year 2014–2015, 181,521 applicants registered for the first SPD appraisal and 69,490 were offered teaching jobs. For the second appraisal, held the next academic year (2015–2016), there were 159,791 candidates and 74,068 were offered jobs. The number of applicants who were offered jobs continued to rise through the next two applications. There were 84,905 in 2016–2017 and 88,864 in 2017–2018. The appraisals for promotion followed the same trend.

These results, although auspicious and necessary, are not to be taken as sufficient. Even SEP (Granados 2018b) acknowledged that improving teaching performance is

[17] https://lajornadasanluis.com.mx/nacional/reclamara-cnte-en-el-df-cancelar-evaluacion-educativa/

[18] https://www.animalpolitico.com/2015/06/chuayfett-responde-a-maestros-habra-evaluacion-llueve-o-truene/

not exclusively the result of evaluating teachers, it requires the effective intervention of specialized actors –such as supervisors, mentors and pedagogical advisors– to support teachers and directors in their professional development. Thus, the consolidation of the teaching profession requires more forceful advances based on three key variables: (a) the professionalization of schools' supervision, (b) mentoring, and (c) pedagogical technical advice.[19]

This third dimension of the NME also included the revamping of teacher training colleges and other institutions –like the Pedagogical University– responsible for the initial training of teachers, as well as new provisions for in-service teacher training. However, the transformation of these institutions has not as yet advanced far enough.

5.3.5 Fourth Dimension: Grant Equity and Inclusion

For Mexico –a country with so many inequalities– to grow as a productive, fair and cohesive society, the education reform had to address equity and inclusion transversally, so as to foster better and more equitable education outcomes and to disassociate them from students' socioeconomic background, gender, or disabilities. A quality education with equity and inclusion was defined by NME as one that: expands educational opportunities for all, without distinctions of any kind; favors the integration of heterogeneous school communities; recognizes that students have different abilities, tempos and learning styles; distributes equitably all resources (technical, physical and human) required for teaching and learning; and grants significant and comparable learning to all students (Tuirán 2018).

Within this fourth dimention several actions were implemented, as reported by SEP (Tuirán 2018). Among them, the following stand out: The infrastructure, furniture and equipment of 33 thousand schools underwent a process of renovation, with an investment of 2.5 billion US dollars, over 6 years; in a process of school consolidation, 7660 students were transferred from 539 very small and ill-equipped schools to larger and better-appointed schools, located within the vicinity of the students' homes; 550 million US dollars were invested to expand the *Full-Time Schools Program*, which extends the daily learning hours, to cover over 25 thousand schools, mostly located in depressed socio-economic contexts; the number of scholarships granted was greatly increased to benefit 7.7 million students, with an investment of 1 billion US dollars, over 6 years; workshops on issues like literacy, conflict management, self-esteem and study skills were offered by schools to familiarize parents with the reform tenets, benefiting almost 109 thousand families; to encourage girls from an early age to opt for a career in STEM –and with the support of women scientists, who acted as mentors– an awareness strategy for girls and young women

[19] For further information on this topic, see Aceves-Estrada (2018), Farias-Maldonado (2018), and Chávez-Campos (2018).

was implemented, from primary school onward[20]; and last, but not least, the illiteracy rate was brought down to 4%, from 6.4% (the rate reported in the 2015 population survey).[21]

5.3.6 *Fifth Dimension: Build a New Governance Structure of the Education System*

In order to promote that every stakeholder works towards fostering quality education for all, transforming the governance structure of education systems has been recommended by several multilateral agencies (UNESCO 2009; UNDESA, UNDP, UNESCO 2012). Such transformation entails restructuring the way in which the authorities administer the education system. In particular, the NME stated the need to democratize its structures in order to promote greater involvement on the part of families, civil society, and other parties with genuine interests in the improvement of education. Such participation would thus result in greater levels of confidence and legitimacy, where public education would be backed up by shared effort and responsibility. Although the NME regarded transforming governance as a necessary element of this structural reform for enabling the system to develop and fortify a culture of accountability and transparency, it was not fully developed, and it remains as one of its great pending issues.[22]

5.4 Developing Twenty First Century Skills

Mexico's curricular reform could be regarded as a *disruptive innovation*, because instead of developing the new curriculum on the basis of disciplinary logics (a method generally used by past reforms), it set out to ensure that compulsory schooling would be both: consistently articulated throughout the three levels of basic education (preschool, primary and secondary) and that it would be relevant to the demands that students will face over the course of their lives. Thus, this reform could also be labelled, in terms of Reimers and Chung's (2016)[23] definition, an *adaptive challenge*. These authors introduced this concept, in the context of

[20] At the outset of this strategy, only one girl in 20 chose to enroll in a STEM profession, in contrast to one in five boys, (Tuirán 2018).

[21] https://www.proceso.com.mx/561558/la-sep-presume-una-tasa-de-analfabetismo-de-4-en-mexico

[22] For more information on the issues and history of governing Mexico's education system, see: Mancera (2018).

[23] Reimers and Chung derive these concepts from the work of Christensen and van Bever (2014) on the tension between sustaining innovation and disruptive innovation.

analyzing curricular reforms, in contrast with that of the *technical challenge*. Such an endeavor, they explain,

> requires reconciling multiple perspectives in defining the goals of education in response to different perceptions of what problems and opportunities merit the attention of schools, which are, after all, a relatively recent institutional invention, particularly in their aspiration to teach all children [… It] is one that educators and societies engage with from time to time, more episodically than the technical challenge of seeking continuous improvement in the effectiveness of schools.

For the first time, a curricular reform in Mexico started out by defining a set of educational goals that would be both, relevant to the demands that students will face over the course of their lives, as well as useful to clarify the constitutional text to a larger audience as to how education can contribute to the development of each student's potential as well as to the enhancement of society.

5.4.1 Mexico's Twenty First Century Education Goals

Since 1917, the Mexican Constitution has sought to educate the whole child, i.e. the educational purpose of the State has been to grant access to school for all children and young people, regardless of their socio-economic background, ethnic origin, or gender, as well as ensuring that the education they receive provides them with meaningful, relevant and useful life-long learning. In short, the Constitution deems education as a powerful means to secure society's viability. Article 3 states that the education system shall develop:

> …harmoniously all the faculties of the human being and shall foster in them, love for country, respect for human rights and an awareness of international solidarity, independence and justice.

Defining the curricular goals proved to be a laborious and intricate undertaking, that involved many people and drafting numerous versions to achieve a consensus. This exercise of setting national goals, for the 15 grades of compulsory education, was not only a first ever, but also an explicit attempt to modify the course of education by setting an explicit new set of aims. It was an adaptive challenge, because it sought to make education relevant to the demands that students would face over the course of their lives.

An important aspect of this exercise was to yield a short and *amicable* document, finally called *Goals for Twenty First Century Education* (SEP 2017a). It is two pages long. On one page, it explores the issue of what sort of citizens Mexico needs in order to prosper and thrive as a democratic society in the twenty first century. On the other, it presents a double entry chart (see Fig. 5.1), made up of four columns and eleven rows, introducing the skills that students must develop during their schooling to become such citizens. Each of the four columns displays one of the four levels of compulsory education (K-12): preschool, primary, lower secondary and high school. The rows describe the eleven competences deemed necessary to

flourish and live fully in the twenty first century. They are the following: (1) language and communication; (2) mathematical thinking; (3) understanding the natural and social worlds; (4) critical thinking and problem solving; (5) socioemotional abilities and life project; (6) teamwork and collaboration; (7) citizenship and social life; (8) creativity and artistic appreciation; (9) health care; (10) environmental care; and 11. digital abilities. These competences are consistent with the work previously done by various authors and organizations to taxonomize them into cognitive, interpersonal and intrapersonal (Hilton and Pellegrino 2012). Being a double entry chart, it can be read in two ways. Vertically, each column displays the academic profile expected upon leaving each school level. Horizontally, each row indicates the students' gradual evolution for developing each competence, through the 15 grades that make up Mexico's full compulsory schooling.

The document is a navigation chart to orient students as well as education professionals through the complex journey of building a fairer, more equitable and developed society. It is both the utopia towards which the country should develop its citizens, as well as a path for each individual to follow. It served at least two important purposes for the curricular reform: First, communicating to society what was to be expected of schools, presently and in the future; as a metaphoric beacon whose light students, teachers and families should follow to achieve the twenty first century goals. Second, it provided a clear direction to the experts involved in the construction of the curriculum. The leaflet was distributed extensively amongst teachers and principals. More accessible versions were also designed,[24] in the form of posters for schools and booklets for students and families. They were circulated in the millions, in order to convey generally what the education reform was seeking.

The *Goals for Twenty First Century Education* were put to the test in the 2016 public consultation, and the final version was published in 2017 (SEP 2017a). According to the results of the 2016 public consultation (Heredia and Razo 2018), the goals received mainly positive feedback, and were generally regarded as *ambitious* goals, but in two contrasting perspectives. The most positive and prevailing view considered them inspiring and capable of guiding the Mexican educational policies. The other more negative and less widespread perception viewed them as rather unrealistic and not easily attainable, due to "insufficient consideration to the limitations and unfavorable environments that prevail in many schools".

5.4.2 The New National Curriculum (PreK-9)

Mexico's compulsory education comprises 15 grades, from preschool to high-school, but the national curriculum only includes the first 12 grades –preschool (3), primary (6) and lower secondary (3)– known as *Basic Education*. Thus, in this

[24] Some may download from: https://www.aprendizajesclave.sep.gob.mx/index-multimedia-carteles-listado.html

SKILLS	AT THE END OF PRESCHOOL, A 5 YEAR OLD SHOULD:	AT THE END OF PRIMARY, AN 11 YEAR OLD SHOULD:	AT THE END OF SECONDARY, A 15 YEAR OLD SHOULD:	AT THE END OF HIGH SCHOOL, AN 18 YEAR OLD SHOULD:
Language & Communication	Express emotions, tastes and ideas in their mother tongue, be it Spanish or an indigenous language. Use language to relate to others. Understand some English phrases.	Communicate feelings, events and ideas, both verbally and in writing, in their mother tongue, be it Spanish or an indigenous language. And If they are speakers of an indigenous language are also able to communicate in Spanish, verbally and in writing. Describe immediate needs, past events and their context, in English.	Communicate in Spanish effectively with multiple purposes and in different contexts, showing respect and self confidence. The same would be true if they are native speakers of an indigenous language. Describe experiences, events, wishes, aspirations, opinions and plans in English.	Express in Spanish with clarity, both verbally and in writing. Identify the key ideas in a text and in a speech and draw conclusions from them. Gather information and interpret it. Argue effectively. Communicate in English, fluently and naturally.
Mathematical Thinking	Count at least up to 20. Use reason to solve arithmetic problems, build structures with 2D & 3D geometric shapes and organise basic information (for example, in tables).	Understand concepts and procedures for solving diverse mathematical problems and for applying them to a variety of contexts. Have a favourable attitude towards Mathematics.	Have further their knowledge about mathematical concepts and techniques, in order to pose and solve more complex problems. Foresee scenarios and analyse situations, as well as appreciate the value of mathematical thinking.	Build and interpret real, hypothetical or formal situations that require the use of mathematical reasoning. Pose and solve problems applying a variety of approaches. Argue the solution to a problem using numerical, graphic or analytical methods .
Understanding The Natural & Social Worlds	Show curiosity and astonishment. Explore their close environment, pose questions, record simple data, design basic representations and expand their knowledge of the world.	Recognise some natural and social phenomena which prompt their curiosity and interest to answer questions. Explore such phenomena through research, analysis and experimentation. Know the main features of some models and representations (for example, maps, timelines and some graphic organisers).	Identify a variety of natural and social phenomena, read about them, gather information from different sources, investigate with the aid of scientific methods, pose questions of increasing complexity, do analysis and execute experiments. Systematize their findings, seek answers to their questions and use models to represent the phenomena. Understand the relevance of natural and social sciences.	Gather, register and systematize information, consulting relevant sources and carry out significant analysis and investigations. Understand the interrelation of science ,technology, society and the environment in specific historical and social contexts. Identify problems, pose questions of a scientist nature and build the necessary hypotheses to answer them.
Critical Thinking & Problem Solving	Structure ideas and suggest activities for playing, learning and knowing more about their context. Solve simple problems and explain their reasoning.	Solve problems applying diverse strategies, i.e.: observation, analysis, deliberation and planning. Gather evidence to support a proposed solution to the problem. Explain their thought processes.	Pose questions to solve problems. To support their answers, they inform themselves, offer analysis and argue their conclusions. With the aid of logs & graphic organisers (like, tables & mental maps) represent their thought processes, and asses their value.	Analyse and critically question diverse phenomena with the aid of scientific methods as well as logical and mathematical thinking. Offer arguments, assess goals, solve problems, elaborate and justify conclusions and develop innovations. Adapt to changing settings.
Socioemotional Abilities & Life Project	Identify their personal qualities and recognise those of others. Show autonomy in expressing ideas to play and learn, both individually and in groups. Experience satisfaction when fulfilling their objectives.	Be able to pay attention. Identify and use their personal strengths to self-regulate their emotions. Be able to relax in order to play, learn, develop empathy and interact with others. Design and undertake short and medium term projects (for example, to improve their grades or to practice a hobby).	Assume responsibility about their well-being and that of others through caring for themselves and for others. Take action (like exercising) to procure well-being in the short, medium and long term. Transform challenges into opportunities. Understand the role of "life project" for the designing of personal plans.	Be self-conscious, determined & resilient. Procure self-regulation & healthy interpersonal relationships. Be capable to act with effectiveness and recognise when it is necessary to ask for support. Make the most of their options and resources. Have the ability to set goals and build a life project based on them. Make decisions that are good for the present as well as for generating new opportunities. Prepare to deal with future risks.

Fig. 5.1 Goals for twenty first century education. (Reproduced from SEP (2017b): https://www.planyprogramasdestudio.sep.gob.mx/index-english-skills-keylearnings.html

Team Work & Collaboration	Participate with interest and enthusiasm in both individual and group activities.	Work collaboratively. Identify their own strengths and recognise and appreciate those of others.	Recognize, respect and appreciate the diversity of skills and visions, when working collaboratively. Have initiative, be entrepreneurial and seek the completion of both personal and collective projects.	Work in teams constructively and exercise a responsible & hands-on type of leadership. Be handy to offer alternatives to perform and solve problems. Endorse a constructive approach.
Citizenship & Social Life	Talk about their family, their traditions, and those of others. Know basic social norms for both home and school.	Develop their identity as a person. Know, respect and exert their civic rights and duties. Favour dialogue. Contribute to a harmonious social environment and reject all kind of violence and discrimination.	Foster a Mexican identity and a love for Mexico. Recognise the country´s individual, social, cultural, ethnic and language diversity. Seize Mexico´s role in the world. Act with social responsibility, regard for human rights and respect for the law.	Recognise that diversity occurs in a democratic space, granting inclusion and equality of rights to all people. Understand the relationships between local, national and international, events. Value and practice interculturality. Appreciate the value of institutions and the importance of the Rule of Law.
Creativity & Artistic Appreciation	Develop their creativity and imagination when expressing themselves artistically (for example, through dance, music theatre and the visual arts).	Explore and experience diverse art forms. Express in a creative manner through music, dance, theatre and the visual arts.	Analyse, appreciate and execute different art forms. Identify and exert their cultural rights (for instance, the right to observe their customs and traditions). Apply their creativity to express themselves through the arts (among them, music, dance and theatre).	Appreciate the diversity of cultural expressions. Value and experience the arts as means of communication and because they provide a sense of identity and contribute to the full development of people.
Health Care	Identify their own physical traits and characteristics, and recognise those of others. Engage in physical activity through games and know that it is beneficial to their health.	Be aware of their body. Overcome challenges through the creative use of their physical abilities. Make informed decisions about their hygiene and nutrition. Take part in physical activities and games maintaining always a healthy and non violent social life.	Activate their body skills and adjust them to the different situations they encounter in play and sport. Adopt a prophylactic approach through discovering the gains of caring for one´s body, eating well and practicing physical activity, regularly.	Assume responsibility for maintaining a good physical and mental health. Avoid risky behaviours and practices. Favour an active and healthy life style.
Environmental Care	Know and practice good environmental habits (for example, waste sorting).	Recognise the importance of caring for the environment. Identify both local and global problems, as well as solutions that can be implemented (like turning off the lights and not wasting water).	Actively promote caring for the environment. Identify problems pertaining ecosystems and the solutions that involve the use of natural resources responsibly and rationally. Commit to the application of sustainable actions for the environment (for instance, recycling).	Understand the importance of sustainability and assume a proactive attitude for developing sustainable solutions. Think globally and act locally. Value the social and environmental impact of innovations and scientific progress.
Digital Abilities	Know about the basic use of the digital tools available to them.	Identify a variety of tools and technological developments which they use to: obtain information, communicate, create, practice, learn and play.	Compare and select the technological resources within their context and use them for a variety of purposes and in an ethical and responsible manner. Learn various forms to communicate and gather information, select it, analyse it, evaluate it, discriminate it and organise it.	Use Information and Communication Technologies ethically and responsibly for investigating, solving problems, producing materials and expressing ideas. Make the most of these technologies for developing ideas and innovations.

Fig. 5.1 (continued)

section, only *Key Learning for Educating the Whole Child* –the national curriculum (PreK-9), (SEP 2017b)– will be analyzed. This curriculum is applicable and mandatory throughout the country in all 233,163 schools, public and private. By law,[25] SEP is the only body responsible for defining the official syllabi for those 12 grades.

A subject of permanent debate in every country is what content must all students learn. Similar questions arise with multiple possible answers, such as: What should be learned at school? What is fundamental and what is superfluous content? Furthermore, what constitutes a curricular priority, for what purposes, and for whom? Mexico has a long tradition of debate in this matter and has achieved some consensus. This reform brought back such controversy, as curricular development is a complex process, which must devise criteria to select and limit the content that should be included in each syllabus. It is also about formulating strategies that might enable the creation of learning opportunities, both inside and outside the classroom or school.

In the case of this reform, such opportunities were geared to achieve the vision expressed in *Goals for Twenty First Century Education*. Thus, at the outset of the curriculum development process, a main issue needed to be tackled. As in many other countries, Mexico's curriculum was overloaded with content which meant that most topics were only superficially covered. This lack of depth meant there were not enough learning opportunities to develop critical and creative thinking, as well as other higher-order thinking skills now included in Mexico's *Goals for Twenty First Century Education*. If profoundness in learning was to be privileged, some difficulties had to be overcome, especially those related to limiting the extension of content to be covered in each grade. It was essential to go beyond the accumulation of content that resulted from the processes of revising and updating the curriculum over time. Also, to ensure the relevance of the curriculum it was necessary to transcend the stance that mostly privileges both the internal logic of the disciplines and the traditional organization of knowledge to complement it with various different perspectives. An example of such different perspectives is *situated knowledge*, which aimed at introducing contexts, personal experience and viewpoints into the teaching process, allowing students to create meaning from contextual situations, to be actively involved in real activities of daily living and to address more real-world problems. Likewise, there were pedagogical considerations. For example, focusing pedagogy on key learnings, instead of demeriting what is fundamental –like developing higher-order-thinking skills– for the sake of covering too many topics. Additionally, ensuring the school community's attention to educating the whole child and its avoidance of other social demands that could interfere with students' learning performance.

The content selected for the national curriculum is the result of the work of a multidisciplinary expert-team of about one hundred specialists, composed of teachers, educational researchers, and didacticians. It is a document that resulted from the

[25] See Education Act 2013, Articles 12 and 48 http://www.diputados.gob.mx/LeyesBiblio/pdf/137_190118.pdf

dialogue between what is desirable and what is feasible. It considers the most current and relevant educational research on how children and adolescents learn, as well as best teaching practices. In this document, *key-learning* is a synonym for competence. It is defined (SEP 2017b) as "knowledge, practices, abilities, attitudes and fundamental values that contribute substantially to the integral growth of the student". Key learnings or competences are to be specifically developed through schooling and "if they are not fully developed, students will exit compulsory education with severe limitations that would affect crucial aspects of their life across other contexts". The assumption being that the lack of these competences would limit the scope of students' citizens skills, i.e. their education will not be relevant, because they will be unable to meet the demands they will face over the course of their lives. In contrast, if key learnings are properly achieved in school, as stated in the national curriculum, pupils will be able to define a plan of what they want to be and what they will do in the future, as a result of defining specific objectives and making personal decisions –what one might call a fulfilling life project. Thus, reducing their risk of social exclusion. Grounded in this definition of *key-learning*, Mexico's Basic Education curriculum aims at educating free, responsible and well-informed citizens who can make the most of twenty first century society. It seeks to *educate the whole child* and is thus organized (as depicted in Fig. 5.2) in three components: (1) Academic Knowledge, (2) Social and Personal Development and (3) Curricular Autonomy.

The structure of the curriculum is one of its novelties. It was intentionally simplified and systematized to facilitate its use by teachers and other readers. Among other features, its syllabi are organized using double entry tables, called *graduated-contents-table*. Each of such tables is constructed using *curricular organizers* of two magnitude orders which are intended to make evident the gradualness of the learnings outcomes (or key-learnings), whose degree of difficulty increases progressively from preschool to the ninth grade.

For instance, in this example taken from the Language Arts syllabus (SEP 2017b), Fig. 5.3 shows one row of the graduated-contents-table. The first column of the table corresponds to the first-order curricular organizer which is *Study-Skills*[26] and the second column corresponds to the second-order curricular organizer, which is *Oral Presentations and Public Speech,* one of the five social practices associated to Study Skills.[27] The learning outcomes are located in the columns to the right, and their degree of difficulty increases from preschool to secondary. The format of each learning outcome is a short statement written with an action verb in the third person singular. This format makes each learning outcome *measurable*, i.e. it is possible to observe (or to have evidence) of weather a student has achieved it or not. Teachers could adapt their teaching to the needs of each student, moving easily, *backwards and forwards*, on each row to facilitate inclusion.

[26] Besides Study-Skills, the Spanish Language Arts curriculum includes two other first-order curricular organizers: Literary Skills and Social Interaction Skills.

[27] The other four social practices associated to Study-Skills are: Reading abilities, Reading-Comprehension, Note taking, and summarizing and Writing.

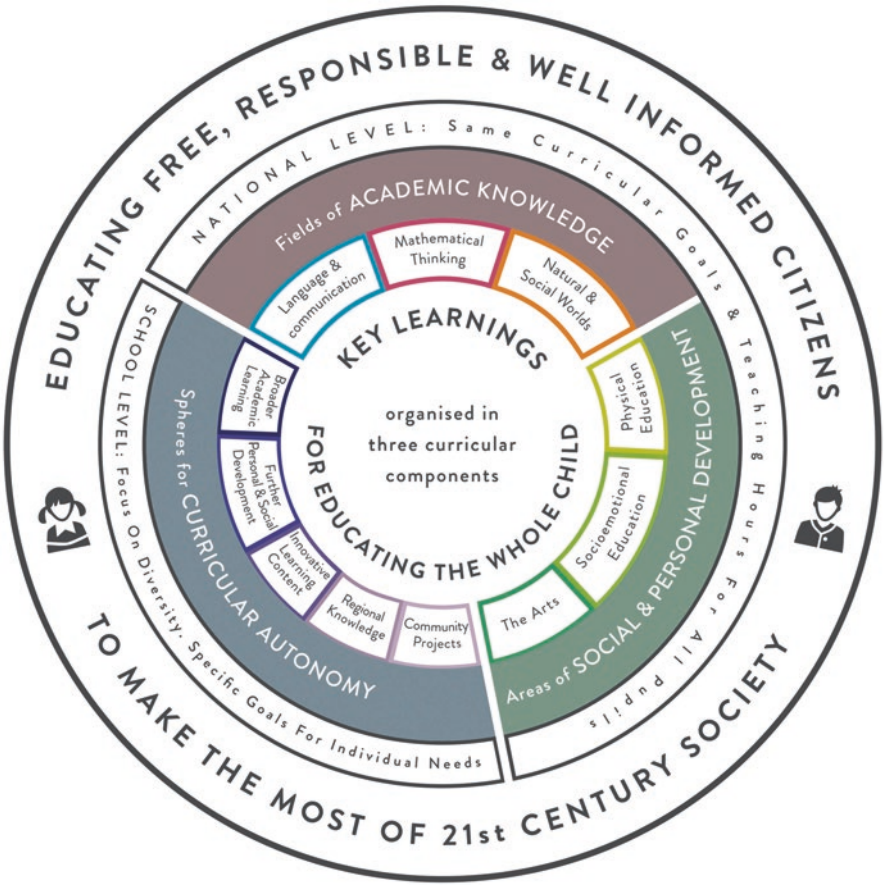

Fig. 5.2 Curricular components. (Reproduced from SEP (2017b): https://www.planyprogramas-destudio.sep.gob.mx/index-english-skills-keylearnings.html

AREA	SOCIAL PRACTICE	PRE-K	PRIMARY			SECONDARY		
			1st & 2nd grades	3rd & 4th grades	5th & 6th grades	7th grade	8th grade	9th grade
STUDY-SKILLS	Oral presentations & public speech	Identifies aloud some characteristics of non-fiction texts.	Delivers a class presentation on a topic using a poster, compiled by the student.	Delivers a school presentation on the physical features & historical events of his/her town.	Delivers a public presentation on scientific facts, discoveries & experimental results, collected by him/her.	Delivers a lecture on a topic of his/her choosing.	Participates in a public round table.	Participates in a public debate.

Fig. 5.3 **Example of a graduated-contents-table** taken from the Spanish Language Arts syllabi (With info from SEP (2017b), elaborated and translated by E: Bonilla-Rius https://www.planyprogramasdestudio.sep.gob.mx/index-english-skills-keylearnings.html

5.4.2.1 Academic Knowledge

The first component of the curriculum is *Academic Knowledge*. It is geared to developing the student's cognitive competences, as well as the *learning to learn* ability, and some intrapersonal and interpersonal skills, such as intellectual openness, teamwork and collaboration. It encompasses subjects organized in three fields: Language and Communication; Mathematical Thinking; and Exploration and Understanding of the Natural and Social Worlds.

Language and Communication This field includes three subjects: Language Arts in the student's mother tongue, which could be Spanish or one of the 60 plus indigenous languages; Spanish as a second language, for indigenous language speakers, and English as a foreign language.[28] For instance, in the case of Spanish Language Arts, the subject is organized in three competency areas (first-order curricular organizers), which in turn are organized by means of language social-practices (second-order curricular organizers). These three areas are:

Study-Skills, students' work in this area aims at acquiring the uses of language for learning with the main purpose of preparing them to do well in their academic performance.

Literary-Skills, the social practices of language included in this area contribute to students' understanding of the creative intention of language and to expanding their cultural horizons.

Social Interaction-Skills, social practices in this field have the purpose of training responsible and thoughtful citizens, from the acquisition of basic skills (like filling formats) to fostering critical and analytical attitudes towards the information disseminated by the newspapers, television, radio and internet.

Mathematical Thinking The only subject in this field is Mathematics, and its curricular organizers are: Number, algebra and change; Shape, space and measurement; and Data Analysis & Probability.

Exploration and Understanding of the Natural and Social Worlds This field includes six subjects: Natural Sciences & Technology (Biology, Physics and Chemistry), History, Geography and Civics. It aims at developing analytical thinking and some research abilities.

[28] Raising the standards of English teaching was a priority of the reform. Thus, the syllabi –for the 10 grades (K3 to 9)– of this subject were developed with the supervision of Cambridge English Language Assessment, in order to fit the standards of the Common European Framework for Languages.

5.4.2.2 Social and Personal Development

This second component of the curriculum contributes to educating the whole child, especially through the development of skills associated with *learning to be* and *learning to live together*. It includes three areas of development: Arts, Socio-Emotional Learning (SEL) and Physical Education (PE). The introduction of SEL is one of the most novel and important features of this curriculum. It allocates specific teaching time, throughout all 12 grades, for students to learn to recognize and manage their emotions. This curriculum acknowledges that identifying and regulating one's emotions can be taught and learned. They are no longer considered personality traits, and the curriculum highlights the role of schools in educating emotionally healthy individuals. The SEL syllabus is organized in five dimensions to be developed from the beginning of preschool (age 3) to the end of secondary school (age 15). These dimensions are self-knowledge, self-regulation, autonomy, empathy and collaboration. The nature of the first three is intrapersonal, while the latter two is interpersonal. Each of the five dimensions, in turn addresses five emotional skills:

Self-Awareness:	attention, emotional consciousness, self-esteem, well-being, appreciation & gratitude.
Self-Management:	metacognition, emotional-expression, emotional-regulation, grit, self-motivation.
Autonomy:	self-initiative, emotional needs targeting, self-efficacy, openness & leadership, decision making & commitment.
Empathy:	respect for others, perspective-taking, spotting prejudice, appreciating diversity, caring.
Collaboration:	assertive communication, responsibility, inclusion, conflict resolution, interdependence.

Arts, SEL, and PE require the development of cognitive abilities, but the curriculum stresses that they are not to be considered *subjects*. Since their nature is the promotion of soft skills, they are labelled *areas of development* and specific pedagogical approaches and assessments are recommended, which differ from those employed in the academic fields. Cautionary notes, like this instance, are important, because they highlight some of the problems that teachers face when attempting to educate the whole child. In this case, the curriculum warns them about the difficulties of using methodologies traditionally developed for teaching and assessing academic subjects when attempting to develop soft skills. But by pinpointing such challenges, this curriculum could also be interpreted as a blueprint for initial and in-service training, because it not only defines learning outcomes, but it also highlights new skills that teachers need to develop. Whether they do it through enrolling in formal professional development programs, individual learning, groups of peers –often school based–, or otherwise, will depend both on each teacher's own particular needs as well as on the availability of opportunities for professional development.

5.4.3 *Curricular Autonomy*

The third curricular component, called *Curricular Autonomy*, is innovative and flexible. It is novel in that it provides students with opportunities to learn new topics or deepen their knowledge, according to individual interests; develop new skills; overcome shortcomings and difficulties; and strengthen their identity and sense of belonging. It is ruled by the principle of inclusive education, because it seeks to meet the individual educational needs and interests of all students. Whereas the content of the first two components is defined by SEP and prescribed at the national level, (for example, all students must receive instruction for an equal number of teaching hours per year and they should meet the same curricular objectives), the content for Curricular Autonomy should be defined at the school level. The new regulations allow schools to develop curricular content, called *clubs*, in five spheres: (1) Expanding academic instruction; (2) Enhancing personal and social development; (3) New relevant content; (4) Regional knowledge; and (5) Social impact projects.

Schools are encouraged to organize mixed age clubs, leading to new ways of interaction and coexistence in the school. It also offers schools opportunities to introduce innovative content, like coding, robotics, finance, entrepreneurship, and it allows teachers to experiment with new methodologies and to renew their teaching practice. Likewise, it grants schools the chance to analyze their strengths and weaknesses and to design an improvement plan. The number of hours devoted to this component varies from school to school, depending on the duration of their school day. In most schools, 20% of class time is devoted to clubs, but schools that have longer school days (of up to 8 h) have to spend all their extra time in clubs, which often turns out be twice the time officially designated for the other two components.

In order for schools to be able to fully implement this component, the curriculum recommended that schools stablished worthy alliances with civil society and other organizations like universities:

> By gaining autonomy, schools can approach public and private organizations specialized in educational issues to be their allies in their quest to overcome lags and reach their goals more quickly. [… these alliances] will increase the social and cultural capital of the members of the school community. The greater the social and cultural capital, the greater the capacity of the school to transform itself into an organization that learns and promotes learning.[29] (SEP 2017b, p. 39).

Curricular autonomy is an innovation that opens up growth opportunities for schools and should not be construed as competent authorities transferring their responsibilities to schools or waiving their obligations. On the contrary, it compels them to support schools and to provide them with resources, so that schools can

[29] The curriculum promotes these alliances as one of the ways in which civil society organizations and others interested in education, such as individual researchers or universities, can add to the transformation of schools. It reckons that their initiatives, publications and other actions will also contribute to reflection on how to support the school to grow and strengthen. SEP issued specific guidelines to guide and regulate these alliances: https://www.planyprogramasdestudio.sep.gob.mx/descargables/doctos/dof/DOF_lineamientos-de-autonomia.pdf

accomplish an adequate implementation of curricular autonomy. Thus, it is about achieving transformations, from the very heart of the school, which would not be possible to generate externally, (Granados 2018b).

5.4.4 Pedagogical Principles of the Curriculum

From primary school onwards, lecturing is Mexico's most prevalent teaching practice. For most of their schooling, students have traditionally listened (or pretended to be listening) to their teacher talk, with few opportunities to research, think, pose questions or interact with other students and thus they have few opportunities to be able to develop twenty first century skills. Therefore, the new curriculum is grounded in more interactive pedagogical approaches, in contrast with the previous one. It emphasizes the importance of teachers acquiring new skills and gradually incorporating new practices into their teaching, grounded in 14 pedagogical principles. These principles are: (1) Focus the teaching process on students and their learning; (2) Incorporate students' prior knowledge into the learning activities; (3) Offer scaffolding to students' learning; (4) Make a point of knowing about students' interests and weave them into the learning activities; (5) Stimulate students' intrinsic motivation to learn; (6) Recognize the social nature of knowledge and thus the importance of students' dialogue and interaction; (7) Promote situated learning by incorporating authentic activities into the teaching process; (8) Visualize lesson planning and learning assessment as two interrelated processes; (9) Model learning to students; (10) Value students' non-formal and self-directed learning; (11) Favor an interdisciplinary approach to teaching and learning; (12) Foster a learning culture; (13) Cherish diversity as a source for knowledge and learning, and (14) Use classroom discipline as a means to promote learning.

The new curriculum considered the gradual but constant application of these pedagogical principles in the classroom –as a necessary condition for the educational transformation it sought– while also acknowledging change would not happen overnight. Hence, this transformation was set as a mid-term goal, that would take some years to be fully implemented. It would require the pedagogical evolution of teachers, in order to yield better student learning outcomes, and thus thoroughly attaining the twenty first century goals, defined by the reform.

5.5 Implementing the Curricular Reform

The new curriculum was innovative in both form and substance, but –as with all curricula– its greater challenge was to reach full implementation. Even with the provision of effective in-service training courses and incentives for change, achieving compromise among all teachers and schools was a considerable challenge. It relied heavily on transforming teaching practices, but –as Webster et al.

(2012) have cautioned– change in the teaching profession should not be understood "as if teachers were a single block of professionals, all having the same responses". Implementing this curriculum required what Reimers (2017) refers to as *efficiency enhancing change*, because it entails "changes in instruction reflecting emerging notions of which competencies matter, but not widespread consensus on either goals or instructional practices to achieve them". He argues that paradoxically, in this form of educational change, practitioners (e.g., those who lead the implementation efforts) might know more about the conditions which are necessary for the curriculum implementation to succeed than those who study them (e.g., theorists and researchers). It is what he calls "a mismatch between public and private knowledge".

This curriculum highlighted that the presence or absence of certain conditions –called *means to achieve twenty first century goals*– could favor the good management and implementation of the curriculum or hinder it. Some of these conditions are to be promoted at the school level and other depend on the education authority's implementation, both at the federal and local levels. The most outstanding means that schools need to work-on to achieve implementation are: (1) Promoting ethics of care to be the regulating principle of all social relations in school; (2) Assimilating the 14 pedagogical principles introduced above into instructional practices; and (3) Bonding with families to jointly promote learning, and evolving to become an organization that learns and promotes learning.[30] Whereas the means that depend on the authorities' intervention are to: (1) Supply relevant inn-service training opportunities[31]; (2) Secure good initial teacher training options; (3) Allow curricular flexibility to schools (both to apply their curricular autonomy as well as to make curricular adaptations when needed); (4) Run a good quality technical assistance service for schools; (5) Provide mentoring to new teachers; (6) Grant funds to schools to be spent on improving their students' learning outcomes; (7) Distribute good quality educational materials; and (8) Periodically renew the school's infrastructure and equipment.

To aid the implementation of the curriculum in schools as well as to honor the principles of equity and inclusion of the reform, a new generation of educational

[30] According to the new national curriculum, for schools to become learning organizations they need to: favor a learning culture, use school-hours optimally, strengthen the head's leadership, receive better technical assistance, allow more autonomy to the school's teaching council, improve the functioning of parents' associations, stablish worthy alliances with civil society and others, receive more federal and local funds to be spent by the school's teaching council, and run a Summer-school. (SEP 2017b).

[31] The SPD introduced five dimensions to be addressed by inn-service training: D1: teachers who know their students, how they learn and what they should learn. D2: teachers who organize and evaluate class work and carry out pertinent didactic interventions. D3: teachers who regard themselves as professionals, continuously improving in order to support their students' learning. D4: teachers who, for students' sake, embrace the teaching-profession's legal responsibilities and ethics. D5: teachers who actively participate in the effective functioning of the school and who bond with the school community and with families to ensure that all students successfully complete their schooling. (SEP 2017b).

materials were developed or acquired by SEP. Thus, in August 2018 more than 200 million free copies of 1492 new titles were distributed to public and private schools (Granados 2018a). This publishing endeavor included various formats –like macro type and Braille system– and the production of new textbooks for *telesecundaria*[32] students, for teaching English as a foreign language, and in 22 indigenous languages.

5.5.1 Route for the Implementation of NME

In March 2017, when the NME was made public, SEP also published a blueprint for implementing the reform, called *Route for the implementation of the New Educational Model* (*Ruta para la implantación del Nuevo Modelo Educativo*). This document (SEP 2017d), the first of its kind in Mexico for an educational reform, contains the overarching policies to be carried out in the short and medium term for achieving NME objectives. Such policies were regarded as priorities to the extent that they were deemed indispensable or strategic for consolidating the NME's five dimensions and for ensuring their continuity beyond the 2012–2018 federal administration. Due to their vast differences in stakeholders, scale and organization, the document broke down the policies in two separate sections: Basic and Upper secondary education. In both cases, it defined each policy, its objectives and relevance, as well as the main activities to be advanced by identifiable SEP's officials and other stakeholders responsible for implementing the policies. It also included specific goals and success indicators, for each policy, per fiscal or school year, as appropriate.

Since the document was published in early 2017, the goals for the 2018 fiscal year (the last of the administration) were defined based on 2017 budget projections and it cautioned that achieving them would depend on the availability of resources approved by Congress for that year. However, it stressed that "in the current context of austerity the Federal Administration is forced to set objectives that, *while remaining ambitious, are budget viable*". The document also contained an annex with timelines for the various policies introduced by the reform and for several regulations that needed to be modified or created anew. In its introduction, this document also stressed the importance of making the NME widely known, so as to be understood and embraced by local education authorities, principals and teachers. It anticipated the need for a broad social consensus:

> The success of the NME implementation largely depends on the school communities understanding and embracing the new pedagogical principles, and school-management rules as well as on the support provided to these communities by the local authorities. (SEP 2017d).

[32] *Telesecundaria* is a system of distance education programs for secondary students created by the government of Mexico and available in rural areas of the country as well as Central America, South America, Canada and the United States via satellite. For more information: https://en.wikipedia.org/wiki/Telesecundaria

5.5.2 Stages of Implementation

The reform began in December 2012 and continued until November 2018, for the full federal administration. It entailed various milestones, like the following, mostly related to the curriculum and its implementation:

December 2012:	The president formally announced the launching of the educational reform and sent three education bills to Congress.
March to September 2013:	Legislative process that amended the Constitution –to include the responsibility of the State to provide quality education and the organization of teachers' appraisals, associated to quality education– and the enaction of three new education acts.
January to June 2014:	First public consultation with the purpose of defining the education goals and the educational priorities for developing the curriculum (Basic education, Upper secondary & Teacher training colleges).
February 2016:	The National Board of Directors of the Strategy *School at the Centre of the System* was formally established, with education officials from SEP and the 32 states governments as its members.
July 2016:	The first drafts of the NME, Mexico's Twenty First Century Goals, and the Curriculum (PreK-9) & (10–12) were published.
July to December 2016:	Second public consultation and debate on the recently published documents.
March 2017:	The final versions of NME and *Goals for Twenty First century Education* and *Route for the implementation of the New Educational Model* were published.
June 2017:	Publication of the final versions of the curriculum (PreK-9) & (10–12).
July 2017:	Started NME's implementation route.
August 2017–August 2018:	Several implementation actions to disseminate the national curriculum (PreK-9) in all schools: Pilot project (Phase 0) of Curricular Autonomy implemented in 1027 schools; online in-service training for one million plus teachers, and several other academic activities, at the national, regional and school levels.
December 2017:	The final version of the curriculum for early childhood (0–3) was published.
July 2018:	Presidential election.
August 2018:	Application of the national curriculum (PreK-9) started in schools.
December 2018:	A new federal government takes office.

The process of implementing the national curriculum (PreK-9) started in March 2017, with the publication of three seminal reform documents: The twenty first century goals (SEP 2017a), the NME (SEP 2017) and the reform's implementation route (SEP 2017d). A few weeks later the curriculum (SEP 2017b) was published[33] and schools had the full academic year 2017–2018 to prepare for its application in schools the following year. This application was planned in two stages. The first stage was implemented in the academic year 2018–2019 and the second was to be implemented the year after.[34] The federal administration ended on November 30, 2018 and thus could not oversee the full implementation of the curriculum in schools.

To facilitate high-quality implementation of the curriculum at the classroom level, and to disseminate the core tenets of the reform and the main innovations of the curriculum, e.g. over one million teachers voluntarily enrolled in *on-line courses* to prepare for implementing the new curriculum in their classrooms (Farías 2018)[35] and almost as many teachers participated in multiple other academic activities, through 2017–2018. These activities were planned jointly by the federal and local authorities, who also met numerous times in national and regional sessions organized by the National Board of Directors of the strategy called *School at the Centre of the System*.[36] This board was created in January 2016 to unite decision makers from the state and federal authorities in a collegiate and horizontal body in charge of designing and overseeing the implementation of the reform policies in schools.

[33] The curriculum was published in print as well as digitally, and a very comprehensive web site called *Key Learnings* was launched (https://www.planyprogramasdestudio.sep.gob.mx/index.html) in July 2017. During the academic year 2018–2019 every teacher, headmaster and supervisor received the printed version of the curriculum. Over 20 different titles were published and distributed to fit all profiles.

[34] The first stage started, at the beginning of the academic year 2018–2019, in August 2018, with the full application of the curricular components: Social and Personal Development and Curricular Autonomy, in all 12 grades (PreK-9). The application of the Academic Knowledge component was split in two: in August 2018, the first implementation stage, the academic subjects were taught in six grades: all three preschool grades, primary's 1st and 2nd grades and secondary's 7th grade. The remaining six grades (primary's 3rd, 4th, 5th and 6th grades and secondary's 8th and 9th grades) were due to start implementing the curriculum in the second stage, starting at the beginning of the next academic year 2019–2020, in August 2019.

[35] In August 2018, at the beginning of the first implementation stage 26,547 teachers participated in a satisfaction survey conducted by SEP, with the purposes of (a) assessing if the online courses had met teachers' expectations; (b) having a clear indication of how to improve such courses; and (c) orienting the design of new in-service strategies. Over 85% of teachers found the course activities relevant; liked the educational resources (readings, videos, etc.); thought the course was useful for becoming ready to implement the new curriculum; and helped them identify their own shortcomings. Link to the online courses: https://fcregistro.televisioneducativa.gob.mx/descargas/AC_Repositorio.html

[36] For more information: https://www.gob.mx/sep/prensa/mensaje-del-secretario-de-educacion-publica-aurelio-nuno-mayer-durante-la-reunion-de-instalacion-e-inicio-de-los-trabajos?idiom=es

5.6 The Politics of the Reform

One of the most important factors for the implementation of this reform was the involvement and commitment to change of several educational authorities and political actors. However, the implementation followed a *top-down* approach which in the long run also proved to be its main hindrance. There seems to be a consensus in that the absence of a more *bottom-up* approach resulted in several teachers' groups and school communities feeling left out from the decision-making-process of the reform, and therefore they did not identify enough with its objectives, because they did not see themselves fully represented in them. Thus, some objected to some aspects of the reform some others rejected the reform, and some more argued it was imposed on them.

5.6.1 Political Pact and Legal Reforms

To set the foundations for the NME, on December 2, 2012, 1 day after the inauguration of the federal administration, the leaders of the then three largest political parties signed an agreement known as the *Pact for Mexico*.[37] The 31 state governors, the head of Mexico City's government, and the presidents of the upper and lower houses of Congress also endorsed it, making it the most important political agreement in decades. The pact aimed at promoting growth, creating jobs, and reducing poverty and social inequality. To do so, it proposed eleven structural reforms[38] that had been obstructed by political gridlock since the 1994–2000 federal administration. The pact's agenda covered 95 policies, with the education reform being one of the most substantial. This political agreement gave rise to a great deal of legislative activity over the next 2 years or so.[39]

The legal changes for the education reform started in 2013, with amendments to Article 3 of the Mexican Constitution, which recognized the right to a quality education for all, and the enactment of three educational statutes: an amendment to the Education Act 1993 and two new statues: the Educational Evaluation Act 2013 and the Teachers' Professional Development Act 2013.[40] These statues aimed at

[37] Those parties were: PRI, PAN and PRD, for more information on the Pact, see https://www.ascoa.org/articles/explainer-what-pacto-por-m%C3%A9xico

[38] These reforms were: education, social security, energy, telecommunications, electoral politics, labor regulations, economic competitiveness, financial policies, taxes, criminal laws and transparency laws. (https://www.economist.com/news/21566314-enrique-peña-nieto-mexicos-newly-elected-president-sets-out-his-priorities-mexicos-moment https://www.dineroenimagen.com/economia/estas-fueron-las-11-reformas-que-marcaron-el-gobierno-de-pena-nieto/104937

[39] See Sada (2013).

[40] For further reference, see INEE (2015) *Reforma Educativa. Marco Normativo,* México. http://www.senado.gob.mx/comisiones/educacion/docs/docs_INEE/Reforma_Educativa_Marco_normativo.pdf

professionalizing teachers through the oversight of their performance, thereby ending the inheritance, sale, and lifetime tenancy of teaching positions. The Educational Evaluation Act 2013 upgraded INEE (Sect. 5.2.2), giving it, amongst other things, autonomy from SEP, and the Teachers' Professional Development Act 2013 created the very controversial SPD (Sect. 5.3.4).

5.6.2 Public Consultations

The main tenets of the education reform are grounded in decades of national and international research, two large public consultations, and recommendations from an analysis of the education system conducted prior to 2013, which identified the challenges the Mexican education system faced in meeting the demands of the knowledge society.[41] The public consultations had substantial participation, both in the number of people who offered their vision and the importance of the actors involved, including: The Governors' Conference (CONAGO), INEE, local educational authorities, teachers, legislators, education experts, researchers, parents and NGOs. The first public consultation took place in 2014, with the organization of 18 regional forums. The conclusions of this process were presented at three national meetings. More than 28,000 people provided input, of which more than 15,000 were in writing. Considering these contributions, in July 2016, SEP published first drafts of the reform documents which were put forth in a second public consultation. This was held during the second half of 2016 and allowed for broad and committed social participation. In total, more than 81,800 entries and 298,200 comments were registered.[42]

Additionally, more than 100 renowned specialists – nationally and internationally recognized– participated in designing the curriculum. Among them were experts in the various disciplines included in the curriculum, in curricular development and didactics, with teaching experience in one or more of the basic educational levels. Once the curriculum document was assembled, it underwent a process of technical validation by academic bodies, including: the Mexican Academy of History, the Mexican Academy of Language, and the Mexican Academy of Sciences. To ensure successful implementation of the curriculum in the classroom, hundreds of thousands of teachers participated in multiple

[41] See, for instance: Uribe et al. (2012), INEE (2012), and Santiago (2012).

[42] This consultation included: 15 national forums organized by SEP with the involvement of more than 1000 people from different sectors; over 200 forums, with almost 50,000 attendees organized by the local authorities, in the 32 states; 28 extended documents prepared by different institutions with opinions and proposals; 1.8 million visits to the general web page; the views of more than 30,200 school communities entered in a particular web page designed for this purpose. All these inputs were systematized by a well reputed team of researchers at the PIPE-CIDE. For the full research report see Heredia and Razo (2018).

activities held during the academic year 2017–2018 to learn about the core tenets and main innovation of the curriculum (Sec. 5.5).

5.6.3 Reform Support and Resistance to Change

Since the reform rested on the assumption that teachers' proficiency sets the limit for what students can learn in schools, the reform focused heavily on the professionalization of teachers and the new legislation laid its foundations, as it has been argued above (Sects. 5.2 and 5.3). One of its central objectives was for the State to regain control of the country's public education. Thus, the powerful SNTE needed to be curbed, which was applauded by many and not so warmly received by some. Most notoriously, CNTE was not prepared to accept the new legal terms and promoted a smear campaign against the educational reform, which captured the media's attention. The media, in turn, conveyed the very biased idea that *teachers* –as if they were a monolithic block– were all against the reform. As previously stated (Sects. 5.2.2 and 5.3.4), schools and pupils in states where CNTE has had the most influence for decades, were especially affected.[43] As was discussed in Sect. 5.2 of this chapter, CNTE vehemently opposed the reorganization of the teachers' career path mainly because it threatened the income and the political power they derived from controlling teaching positions. However, rather than acknowledging their own disreputable practices, CNTE put forth a narrative to discredit the evaluation of teachers as a *punitive exercise*. The hundreds of thousands of teachers who have happily and voluntarily undergone the new evaluations –tens of thousands more than CNTE's objecting teachers– should have been sufficient to counteract CNTE's effect in the public opinion. However, it was politically profitable for one of the opposition parties to incorporate CNTE's cause into his political agenda. This party won the July 2018 presidential election and took office on December 1st, 2018, leaving many of the reform policies in limbo.

5.7 Assessing the Execution of Reform Policies

It is rather early rather early to properly evaluate the expected systemic changes of this reform. However, there are some interesting achievements –supported by studies and surveys conducted by independent bodies and individuals– that are presented here: (1) An overview of the reform based on an OECD study (Sect

[43] There is plenty of evidence from people, in particular areas of the country, directly distressed by CNTE's months-long picketing and striking. Like this testimony of Carlos Tello (2018), well known novelist and historian, "I lived in Oaxaca, the violence of the teachers, who for months took the center of the city, blocked roads, made children lose classes, broke and defaced everything, and drove hundreds of businesses into bankruptcy."

5.7.1); (2) The results of the pilot program to implement curriculum autonomy in schools (Sect 5.7.2); (3) An analysis of the importance of state authorities' participation in the implementation of policies, particularly for improving student learning outcomes and for accountability purposes (Sect 5.7.3); and (4) The importance of reforms' allowing continuity to successful policies, in this case by expanding full-time schools, for their effectiveness in improving students learning outcomes (Sect 5.7.4).

5.7.1 OCDE's General Appraisal of Mexico's Educational Reform

A team of researchers led by Beatriz Pont[44] recently conducted a comprehensive study (OECD 2018a) of the different structural aspects of the Mexican reform. It stressed that many of the changes that Mexico started to implement in 2013 are moving in the right direction:

> Mexico has taken important steps to improve the coverage and quality of its education system and is moving from a system that is driven by inputs and numbers towards one based on quality of education, and more focused on student learning. [To progress further on this path] Mexico's education system should continue its efforts to strengthen the delivery of compulsory education in its schools to improve student learning… [But it also warned that] all the merits of the recent educational reform package require careful support with an inclusive and resourceful implementation process… [they need] time to mature and flexibility to be adjusted as required to ensure schools deliver quality education for all students.

Pont's team offered various recommendations for the new government: a) Reinforce the vision and goals of the reform; b) continue focusing on student learning; c) promote stakeholder engagement; d) take the context into consideration; e) secure enough resources; f) and revise the strategy.

These researchers also identified four priorities for future policy development: (1) Providing equity with quality; (2) Providing twenty first century learning to all students; (3) Supporting teachers and schools; and (4) Focusing evaluation and assessment on schools and student learning. The study highlights the need to reinforce inclusiveness, horizontality and collaboration in the future implementation processes. Because, although it recognizes Mexico's great capacity "to implement national policies and programs to a very large scale" to be quite impressive, it also emphasizes that Mexico has followed a top-down approach, and highlights that such an approach has limitations and it therefore needs to be coupled with bottom-up strategies.

[44] Senior education policy analyst of the OECD.

5.7.2 Piloting Curricular Autonomy

During the academic year 2017–2018, Curricular Autonomy, the most novel of three components of the new national curriculum was implemented in 1027 schools, as a pilot trial known as *Phase 0*. FLACSO-Mexico conducted a survey (Gomez-Morin 2018) to assess the challenges faced by school communities when implementing this component of the reform. The findings showed Phase 0 allowed schools to be immersed in a very interesting and productive reflection process, which, by gaging their own school's context and identifying the individual interests and needs of their students, enabled them to make curricular decisions. The survey revealed the diversity of hurdles school communities encountered while implementing clubs. However, it also showed that, in general, schools developed innovative and flexible strategies to overcome such hurdles, revealing this component's potential to transform the organization of learning activities within a school. This is a good example of how by relying on the ingenuity of executors –rather than on theorists' knowledge– *efficiency enhancing change* was brought about, Reimers (2017). According to FLACSO's survey, the schools involved in Phase 0 reported improvement in the following areas:

The students' interest in learning was boosted, particularly in relation to the clubs they were registered in
Both students and teachers reported diverse opportunities for meaningful learning, and they described the work they did as an enriching experience.

Better student interaction, with a noticeable decrease in bullying
This might be the result of students from different grades and classes being allowed to register in a club according to their individual interests, rather than their age or their class. This reorganization of the school allowed children to get to know pupils from other classes, to experience new interactions, and to build new relationships.

Strengthening students' sense of belonging to the school community
The fact that students are consulted about their interests and then allowed to choose which clubs they will register has enhanced students' confidence, pride, and sense of belonging to their school.

Improvement of positive attitudes and values in students
Again, students being considered when designing the autonomous curriculum of their school appears to have benefitted their attitudes and values. They show more respect and are more prone to collaborate than before.

Consolidation of interdisciplinary teaching teams
Teachers have collaborated more and have been opened to organizing teaching teams, with each teacher bringing to the table specific content knowledge and skills.

Increased collaborative work among students, among teachers, and between students and teachers

The active participation of all stakeholders in developing the autonomous curriculum has enhanced the interaction among all members of the school community, including parents. And their involvement has had a positive impact on students' learning.

However, since this evidence is part of an ongoing implementation process and only one school year has elapsed, it is still not feasible to ascertain the level of impact that these developments might have in terms of long-term improvements in the quality of learning and the general organization of the school. An urgent issue that emerged from the survey is the need for more in-service training for teachers, head teachers and supervisors. The Curricular Autonomy component demands a great deal from these professionals, as active protagonists in designing the autonomous curriculum of their schools. Phase 0 participants continuously expressed a need for greater support and advice during the implementation process, not only through training, but also with timely follow-up by supervisors and other responsible stakeholders. Furthermore, these schools identified the need for more training, specifically for the preparation of the school diagnosis, the planning stages, and the design of the autonomous curriculum of their school.

The regulations for the implementation of Curricular Autonomy require that schools design clubs –or choose them from a menu sanctioned by SEP–[45] well adapted to their particular conditions, including the infrastructure and resources of the school. However, the survey indicated schools need more support to ensure the autonomous curriculum they develop is truly appropriate to their own context. In this regard, the survey revealed the need to continue improving the infrastructure and architectural design of schools to be better equipped to respond to the demands of twenty first century goals. Traditional classrooms turned out not to be well suited for many of the clubs designed within the Curricular Autonomy component. What is desirable is the development of learning spaces that allow each child to unleash their full potential, promote collaborative work, and foster individual concentration, when needed.[46]

The survey has made clear that there have been gradual, but concrete, steps towards implementing curricular autonomy in schools; however, there is still a long way to go to fully achieve all the assumptions and core tenets the new curriculum has put forward for this curricular component. Future efforts must be channeled to further consolidate those elements of curricular autonomy which have had positive impacts on students and the educational community in general; as well as to reinforce the strategies for curricular design and pedagogical development in schools. This will facilitate an important transformation of schools, not only by laying the

[45] To access this menu go to: https://modulos.siged.sep.gob.mx/propuestas_curriculares_cicloescolar_18-19/

[46] Several architects are already very successfully designing such spaces, in the USA, Europe, China and other parts of the world. See, for instance, Prakash Nair (2014) https://www.fieldingnair.com/team/prakash-nair/ and Rosan Bosch (2018) http://www.rosanbosch.com/en

conceptual and organizational foundation to grant schools an unprecedented margin for curriculum development, but also in the improvement of institutional conditions and capacities that will bring about the transformation of educational practices that will in turn ensure educational quality.

5.7.3 Local Authorities' Strategies to Improve Learning Outcomes and Curb Inequality

As discussed earlier more accountability of all education stakeholders is required, particularly at the state level and with regard to students' learning outcomes. The National System of Educational Evaluation Conference is a collegiate body that stemmed from the legal reforms of 2013, which included high officials from SEP and INEE as well as the secretaries of education of the 32 states. One of its main purposes was to monitor and verify compliance with the evaluation policies, like students' performance in PLANEA tests. If this body was to continue its work as originally planned, such accountability could be in place rather sooner than later. The data analysis of PLANEA 2017, at the state level, provides very compelling evidence on the importance of state educational authorities' involvement when they place student learning outcomes at the core of their policies. Between 2015 and 2017, 11 states significantly increased their results in Spanish and 18 did so in Mathematics. Some states like Sonora (INEE 2018), Puebla (OECD 2016) and Mexico City (AEFCM 2018) made concerted efforts to improve the students' learning outcomes. Despite these efforts, students' academic performance at the national level remained, in 2017, very much the same it was in 2015. The improvements of some states were defused by the deterioration of other states' mean scores, like Tamaulipas (which declined 28 points in both Spanish and Mathematics) and Zacatecas (which declined 23 points in Spanish, placing 27th out of the 28 states that took the test).[47] Thus, without clear accountability from local authorities, Mexico's performance, at the national level, could continue to stagnate.

Sonora's plan for improvement is analyzed next, since this state stands out of the 29 that participated in PLANEA in 2017, with an increase closer to 30 points, 29 points in Spanish and 27 points in Mathematics. No other state had increments of such magnitude, and Sonora achieved it in both subjects. This transition is particularly remarkable, because in less than 2 years, Sonora improved from being among the lowest performing states in 2015 (27th place, out of 28 that took the test) to being above the national mean score in 2017. These results were not accomplished by chance. They are the result of a very well-devised plan, developed by the local authorities and carried out by the school districts and the schools, through the 2016–2017 academic year. This plan had the full political support of Sonora's governor, who led a wide communication campaign to bring on board Sonora's society.

[47] The four states controlled by CNTE did not took the test (INEE 2018).

All 9th grade students, as well as their teachers and principals, received a letter from the state's secretary of education inviting them to give their best effort and explaining the personal and social benefits of doing so. A reinforcement program was also put in place for the 122 secondary schools which had the lowest performance in PLANEA 2015. To identify students' weaknesses, all 9th graders sat for a diagnostic evaluation; and, to assess the progress of the strategy, another test was given halfway through the academic year. Additionally, PLANEA's sample was expanded to include all 9th grade students. There were also three types of in-service training: (1) Innovative teaching and learning workshops for teachers from targeted schools; (2) School management workshops for principals of targeted schools; and (3) A general workshop about the PLANEA strategy for the staff of all secondary schools. Specific educational materials, for students and teachers, were produced: workbooks for students (392 exercises); teachers' guide (with pedagogy and 900 exercises); 100 videos[48] and 64 content presentations for facilitating face-to-face sessions. An important aspect of the plan was the follow-up visits to the schools by local authorities. There were nine follow-up teams visiting the schools, located in the seven regions of the state (Mexico's second largest, with an area of 70,000 mi^2), offering their support to teachers and principals, as well as meeting with parents. Each team had a leader and two support members. The leaders were high-level administrators responsible for the operation of secondary schools.

Another issue that deserves a closer analysis with regard to local authorities' policies is the relation between inequality and learning outcomes. Too often poor learning outcomes are exclusively explained as a causal effect of social inequality. But, as De Hoyos' (2018) studies and others' have demonstrated, income is not the only, nor necessarily the most decisive, factor to account for poor learning outcomes. For instance, in 2015, Nuevo Leon –the state with the highest GDP in Mexico[49]– was just above the mean national score, with 502 points in Spanish and 501 in Mathematics. In contrast, that same year, Puebla –a state with a 59.5% poverty rate and almost a third of Nuevo Leon's per capita income– was at the top of the table, in first place, with a score in Mathematics of 527 points. Two years later, Puebla increased six points to score 533 and secure the first place; whereas Nuevo Leon dropped down seven points in Mathematics and four points in Spanish, to worsen its already mediocre outcome. The inertial impulse of a state, like Nuevo Leon's, whose education once stood out, is not enough to stay at the top. And its GDP, however high, is also not sufficient to guarantee an outstanding result. On the contrary, the implementation of specific policies and strategies matters more. The difference between Puebla's significantly better learning levels than those of Nuevo León is mainly explained by.

[…] the educational policy carried out by Puebla during the last 6 years where the students' learning was placed at the center of the educational system. […] Those

[48] The videos can be accessed at: https://youtu.be/wJn36dh7S1U

[49] Nuevo Leon is the Mexican state with the highest GDP, without considering oil extraction (INEGI 2017).

schools that had the lowest levels of achievement received technical assistance and mentoring from supervisors and the local educational authority. The schools carried out a plan whose main objective was to improve learning outcomes. All this had a significant impact on the learning of Puebla's children, regardless of their income level. (De Hoyos 2018).

These data, therefore, substantiates that if more local education authorities recognize their role in implementing consistent and continuous pedagogical strategies to improve student learning outcomes, Mexico's educational landscape, as a whole, will be transformed faster, as has occurred in other countries.[50]

5.7.4 The Impact of Longer School-Hours on Learning

The 2013 amendments to the Constitution did not cancel policies that were being successful, on the contrary it often reinforced them. A good example is the federal program aimed at extending school-hours, called *Full-Time Schools*. It was created in 2007, 5 years before the reform started, because most children in Mexico have a very short school day, of only 3 h in preschool and four and a half or five hours in primary. In contrast, full-time-schools have school days of 6–8 h. As part of the reform policies, SEP expanded, strengthen and consolidated this program by increasing the number of schools (from 6700 in 2012–2013 to 25,132 in 2017–2018.25); introducing good practices to make quality use of the extra school-hours; and reorienting the program to the areas where it was most needed, especially to indigenous, rural and multi-grade schools in order to curb inequality (Treviño and Velasco 2018). Besides extending the school hours, these schools received federal funds to: (a) provide technical assistance for bolstering school management skills; (b) acquiring relevant educational materials; (c) organizing school sports and culture activities to boost social interaction; (d) paying staff extra hours; (e) improving schools' infrastructure; and (f) supplying food service, particularly in schools located in extreme poverty contexts.[51]

Since the 1980s, the extension of the school day is a recurrent policy across the world[52] to care for children in vulnerable sectors. This policy is based on the idea that better school resources, such as more instructional time and access for students

[50] Poland provides a good example of how investing on regional development has an impact at the national level. And particularly the role that education plays in such development, World Bank (2017). See Chap. 7.

[51] In over 13,000 full-time schools, more than 1.5 million students eat a full meal every day. Also, 20 thousand students have access to a full breakfast provided by The National System for the Integral Development of the Family (DIF). Thus, the food services have become an important asset for students' health, attendance and permanence in school. They have also helped forming stronger bonds among the families, since mothers often participate in cooking the school meals, using the federal resources that full-time schools receive for feeding students. See Treviño and Velasco (2018).

[52] For Latin America, see studies on Chile (Arzola 2010; González and Paz 2010), Colombia (Hincapié 2016), and Uruguay (Llambi 2014).

and teachers to more educational materials, will increase the number of hours of effective instruction and thus students' academic performance will improve. There is evidence from a number of national and international studies about how extending the learning hours of the school day can indeed have a very positive impact on the quality of learning, particularly among pupils from less prosperous contexts.[53] A longer school day has also been linked to other positive indicators, such as lower teen pregnancy and juvenile crime rates.[54]

One of the most important results of this program is that the students attending full-time schools performed better academically than their peers in similar schools, using various standardized tests and indicators. The World Bank reports that the results of the evaluation show:

> […] Strong evidence about the positive effects of the program on the learning outcomes of elementary school students and […] that the effects of the program are maintained over time and they have a greater differential effect for students in vulnerable and highly marginal schools. (Silveyra et al. 2018).

The results also revealed that increasing the school day and other resources received by full-time-schools has dynamic, longstanding effects. The schools in the poorest areas showed a greater reduction in the number of students in the lowest levels of Mathematics and Spanish performance, as well as in other indicators, like attendance, failure and school dropout rates. There have been substantial investments to keep these schools running. Hence, one of the greatest challenges Mexico faces is to find the resources to extend the school hours and convert every school into a full-time-school.

5.8 The Challenges Ahead

The education reform presented in this chapter was embedded in a set of eleven larger structural reforms which were introduced by the federal government with the intention to modernize Mexico. What mainly triggered the reform were the well-known low levels of performance and inequality in educational outcomes, documented by national and international assessments. The policies advanced by the reform were well grounded in two public consultations (2014 and 2016). Such policies included an extensive and solid curricular reform (0–3, PreK-9 & 10–12) with a definite focus on developing twenty first century skills. The objective of making education truly relevant to face the needs of the knowledge society is central in all key reform documents. The new curriculum offered more autonomy to schools and had a clear emphasis on learning outcomes and teaching skills.

It is true, that the final version of the twenty first education goals, the NME and the new curriculum were not published until 2017, more than 3 years after the

[53] See for instance: Cabrera (2015), Padilla (2016) and Cabrera (2018).

[54] See Berthelon and Kruger (2011).

constitutional reform was passed and with only 14 months of the federal administration left. Furthermore, the universal implementation of the curriculum in schools did not start until August 2018, with only 15 weeks left. But, as former education ministers (Nuño 2018 and Granados 2018b) have argued, in the case this reform, its initial conditions clearly influenced the strategy adopted by the government: it was imperative to address first the political relations with the union and to fully recover the leadership of the education system, before outlining the NME and defining the twenty first century goals and the new curriculum. This political operation took longer than it would have been desirable, but by the first semester of 2017 most policies of this ambitious reform were already in place, with not enough time for a single federal administration (with a six-year term) to implement them.

It is also true that some of these policies have developed and taken root better than others. Despite training over one million teachers, during the 2017–2018 academic year, the biggest challenge continues to be the transformation of teaching practices to comply with twenty first century goals and curriculum standards, particularly in the more economically deprived areas. Initial and in-service training of teachers are in need to be improved much further. Also, the technical assistance service to schools has advanced more at the regulatory level than at the practical one, and hence it is still in need to be fully implemented, in spite of having trained 100% of supervisors; which is a necessary but not sufficient condition for ensuring the evolution of schools into becoming learning organizations.

Also, building a new governance structure for the education system, although being one of the main objectives of the reform, was not fully developed by it, and it remains as one of the reform's great pending issues. On the one hand, if the reform was to succeed, the State needed to regain full control of the education system and, for political and strategic reasons, it had to be done at the outset of the administration (Nuño 2018). Thus, the chosen method to break the bureaucratic-institutional inertia was to significantly modify the country's legal framework in order to shift the political, administrative and financial processes of the educational apparatus. On the other hand, this top-down approach –however necessary– had the negative result of the educational reform not being embraced by everyone, particularly not by those whose vested interests were severely affected. Thus, the political opposition took advantage of the discontent among dissident teachers' groups and *canceling the educational reform* became one of the main campaign promises made by the candidate who won the 2018's presidential election.[55]

Thus, the greatest challenge forward, for the success and sustainability of the reform principles –i.e. to ensure quality education with equity for all Mexicans– is to build a model of education governance, through a more bottom-up approach. A governance where:

[55] https://www.eluniversal.com.mx/elecciones-2018/lopez-obrador-promete-cancelar-reforma-educativa

> Flexibility, horizontal interaction between various actors, transparency and co-responsibility are the most outstanding features, […] but such governance –to which we aspire– must be constituted from the base of the educational system itself. (Granados 2018b).

Despite two very large public consultations, the reform design and implementation were deemed, by many, as a top down process. And indeed, some teachers wished they had more opportunities to participate in the construction of the reform. But, since political concertation took up much of the administration's efforts, there was not enough time left to promote a more bottom up approach which might had been better for the wide acceptance of policies, but which would had also been more time consuming. And time was unfortunately scarce.

Political timing often clashes with technical effectiveness. The less politicized a reform, the more chance it has to consolidate its goals with technical rigor. Thus, it is a well-known fact that long policy cycles are necessary, because real transformations do not occur overnight. And also, because such transformations need time to permeate well through the system and be widely accepted, understood and embraced by all its stakeholders. However, in Mexico's case, continuity might be the biggest challenge of this reform.

Education in Mexico is not so much a State policy as a governmental one. Hence, its aims tend to shift with each presidential term. In this instance, the ruling party (PRI) lost the 2018 election to a recently created party (MORENA). MORENA's narrative on education left out the objective examination of facts pertaining the reform, the concrete advances it had achieved, the hard data on which such advances are based, as well as the high approval rate in opinion polls that the reform consistently had, from 2012 to 2018 (Granados 2018a). A narrative constructed mostly to please its political allies –like CNTE– much more political than objective.

Thus, as part of his presidential campaign, the current president promised to reverse the educational reform and, in May 2019, a new constitutional reform was introduced with the aim to roll-back the educational policies of the previous government. The three education acts that were enacted in 2013 are currently being discussed in Congress and therefore the fate of individual policies remain as if yet unknown. Appraisals were eliminated from the constitutional text and teacher initial and in-service training have taken its place. This constitutional reform dismantled INEE and a new organization –which shall promote teacher training– has taken its place, keeping some of INEE's original personnel and part of its budget. It has a governing body newly appointed by the Senate. Until the legislative process for the enaction of the new education acts is complete, it is uncertain how much power will be reverted to the teachers' union and what reform policies will carry on. It is problematic to make accurate predictions, because the last few months have been flooded with opportunism and demagogy.

Let us hope, educational researchers, education faculties, civil society as well as local authorities, who have been working hard at implementing the main reform policies and who could also be held accountable for the students' academic performance would question the reversal of many reform policies. Public opinion, who

was so favorable to the 2012 reform and to curbing the union's power, might also oppose reinstating the corrupt arrangements that were in effect before 2012. As a former education minister pointed out (Granados 2018b), in the past, education policies were basically the result of doing what was possible, but the 2012 reform set out to make possible *what it was necessary*. And I would add that a great part of *what it was necessary* was to transform Mexico's education system into a high performing system, which this reform indeed set out to do. Although it must be said, it is not, by any means, a reality yet. But at least, this reform did lay very solid foundations on which to continue erecting such a system. Hopefully, the current federal government will not destroy such foundations and, on the contrary, will find ways to build upon them, just as the 2012 reform built upon those past policies which were yielding good results.

Optimistically, the new education officials might appreciate that, if schooling needs to be about universally endowing students with twenty first century skills and thus bringing about equity for all, the policies described in this chapter require time to consolidate. They might also recognize that such policies need to be backed up by a broad social consensus, an accord based upon the assumption that all citizens understand and support why –as I stressed, in the words of Lomnitz, at the beginning of this chapter– *education truly matters*.

References

Aceves-Estrada, A. M. L. (2018). El Servicio Profesional Docente. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 75–96). México: Secretaría de Educación Pública.

AEFCM. (2018). *Retrato del quehacer educativo en la Ciudad de México. Testimonios desde las Escuelas, 2012–2018*. Mexico: Autoridad Educativa Federal en la Ciudad de México.

Arzola, M. P. (2010, December). *Impacto de la Jornada Escolar Completa en el Desempeño de los Alumnos, medido con la Evolución en sus Pruebas Simce*. Tesis de Grado Magister en Economía. Instituto de Economía. Pontificia Universidad Católica de Chile. http://economia.uc.cl/wp-content/uploads/2015/07/tesis_mparzola.pdf.

Berthelon, M. E., & Kruger, D. I. (2011). Risky behavior among youth: Incapacitation effects of school on adolescent motherhood and crime in Chile. *Journal of Public Economics, 95*(1–2), 41–53. https://www.sciencedirect.com/science/article/abs/pii/S0047272710001210.

Bonilla-Rius, E. (2018). Aprendizajes clave para la Educación Integral: La norma curricular para los niveles de preescolar, primaria y secundaria. In SEP, *Educación en México 2013–2018: Balance y perspectiva* (pp. 154–179). Mexico: Secretaría de Educación Pública.

Bosch, R. (2018). Cómo el diseño físico puede motivar a los estudiantes. *Trasatlántica de Educación: Eduación para innovar, innovación para educar* pp. 20–21. https://issuu.com/consejeria.mx/docs/transatlantica_20-21_web.

Cabrera, F. (2015). *Does lengthening the school day increase students' academic achievement? Evidence from a natural experiment*. University of Sussex, *Working Paper Series,* No. 74–2015. https://pdfs.semanticscholar.org/c955/feb1b25fbc8735799bd91cb8ff69f47ee2d3.pdf. Accessed 5 Aug 2019.

Cabrera, F. (2018). Programa *Escuelas de Tiempo Completo:* resultados positivos y lecciones apendidas. *Distancia por tiempos. Blog de Educación. Nexos.* https://educacion.nexos.com.mx/?p=1200.

Chambers-Ju, C., & Finger, L. (2017). Teachers' unions in Mexico: The politics of patronage. In T. M. Moe & S. Wiborg (Eds.), *The comparative politics of education* (pp. 215–238). Cambridge: Cambridge University Press.

Chavez-Campos, M. A. (2018). La formacion inicial docente. Estrategia de fortalecimiento y Transformación de las Escuelas Normales. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 114–129). México: Secretaría de Educación Pública.

Christensen, C., & van Bever, D. (2014, June). The Capitalist Dilemma. In *Harvard Bussiness Review* 92, no. 6. https://hbr.org/2014/06/the-capitalists-dilemma.

De Hoyos, R. (2018, November 2). "Educación: clave para superar pobreza y desigualdad." Interview by Gerardo Laveaga. *El mundo de la Educación*. http://elmundodelaeducacion.mx/revista/entrevistas/item/rafael-de-hoyos. Accessed 5 Aug 2019.

De Hoyos, R., & Estrada, R.. (2018). ¿Los docentes mejoraron? ¡Sí!. In *Nexos* 480*,* (January). https://www.nexos.com.mx/?p=39531.

Farías, J. M. (2018). La formación continua en Educación Básica. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 97–113). México: Secretaría de Educación Pública.

Fernández, M. A., & Herrera, N. (2018, October). La batalla por la nómina. In *Nexos* 490. https://www.nexos.com.mx/?p=39524.

Fuentes-Molinar, O. (2013). Las tareas del maestro y los desafíos de la evaluación docente. In R. Ramírez-Raymundo (Ed.), *La reforma constitucional en materia educativa: alcances y desafíos*. Mexico: Instituto Belisario Domínguez, Senado de la República. http://bibliodigitalibd.senado.gob.mx/bitstream/handle/123456789/2937/La_Reforma_Constitucional_en_Materia_Educativa.pdf?sequence=1&isAllowed=y. Accessed 26 Feb 2018.

Gomez-Morin, L. (Ed.). (2018). *Seguimiento a la implementación de la Fase 0 del componente de Autonomia Curricular*. México: FLACSO. https://www.aprendizajesclave.sep.gob.mx/descargables/biblioteca/basica-autonomia/Seguimiento-a-la-implementacion-de-la-fase-0.pdf. Accessed 26 Feb 2018.

González, A., & Paz, M. (2010). Impacto de la jornada escolar completa en el desempeño de los alumnos, medido con la evaluación de sus pruebas SIMCE. Tésis Magíster en Economía, Pontificia Universidad Católica de Chile, Santiago. http://economia.uc.cl/publicacion/impacto-de-la-jornada-escolar-completa-en-el-desempeno-de-los-alumnos-medido-con-la-evolucion-en-sus-pruebas-simce/. Accessed 11 Nov 2018.

Granados, O. (2018a). Los grandes temas de la Reforma Educativa. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 14–31). México: Secretaría de Educación Pública.

Granados, O. (2018b). Prólogo. In O. Granados, X. P. de la Mora, & E. Betanzos (Eds.), *Fortalecimiento de derechos, ampliación de libertades. Reforma Educativa. Reforma en Materia de Transparencia. Reforma en Materia de Combate a la Corrupción* (pp. 15–25). México: Fondo de Cultura Económica.

Heredia, B., & Razo, A. (2018). *Consulta sobre el modelo educativo 2016*, CIDE, Programa Interdisciplinario sobre Política y Prácticas Educativas. https://docs.wixstatic.com/ugd/9fac05_a8d98950760f44b9936e432220d074b3.pdf. Accessed 26 Oct 2018.

Hilton, M., & Pellegrino, J. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, DC: NRC, The National Academies Press.

Hincapié, D. (2016). *Do longer school days improve student achievement? Evidence from Colombia*. *IDB Working Paper Series,* No. 679. http://www.education.gov.yk.ca/pdf/schools/do_longer_school_days.pdf. Accessed 11 Nov 2018.

INEE. (2012). *La Educación en México: Estado actual y consideraciones sobre su evaluación.* Presentación del INEE ante la Comisión de Educación de la LXII Legislatura de la Cámara de Senadores, Ciudad de México, 21 de noviembre de 2012, México: INEE. http://www.senado.gob.mx/comisiones/educacion/reu/docs/presentacion_211112.pdf. Accessed 26 Feb 2019.

INEE. (2015). *Reforma Educativa. Marco normativo*. México: INEE, México. http://www.senado.gob.mx/comisiones/educacion/docs/docs_INEE/Reforma_Educativa_Marco_normativo.pdf. Accessed 26 Oct 2018.

INEE. (2018). *Resultados Nacionales de PLANEA 2017. Secundaria, PPT presentation*. https://www.inee.edu.mx/wp-content/uploads/2019/02/P2A336-secundaria2017.pdf.

INEGI. (2014). *Censo de Escuelas, Maestros y Alumnos de Educación Básica y Especial (CEMABE)*, Instituto Nacional de Estadística y Geografía & Secretaría de Educación Publica. Mexico. https://www.uv.mx/personal/kvalencia/files/2013/09/INEGI-2014-Censo-Escolar.pdf

INEGI. (2015). *Encuesta intercensal 2015.* http://www.beta.inegi.org.mx/contenidos/proyectos/enchogares/especiales/intercensal/2015/doc/eic_2015_presentacion.pdf. Accessed 26 Oct 2018.

INEGI. (2017). *Producto interno bruto por entidad federativa 2016,* Comunicado de prensa núm. 536/17, 6 de diciembre de 2017. http://www.indetec.gob.mx/2015/wp-content/uploads/e-Financiero/351/Evolucion/BoletinNo351_3.pdf. Accessed 10 Nov 2018.

Latapí, P. (1992). El pensamiento educativo de Torres Bodet: una apreciación crítica. In *Revista Latinoamericana de Estudios Educativos,* XXII, No. 3: 13–44. plan de once años jaime torres bodet pdf.

Llambí, M. C. (2014). La política de tiempo completo y los resultados educativos en la enseñanza media en Uruguay. In *Revista de economía* 21 No. 1: 101–152. https://dialnet.unirioja.es/servlet/articulo?codigo=4747511.

Lomnitz, C. (2018, January). Tomarse en serio la educación. In Nexos 480. https://www.nexos.com.mx/?p=35313.

Mancera, C. (2010). Financiamiento de la educación básica. In A. Arnaut & S. Giorguli (Eds.), *Los grandes problemas de México, t. VII, Educación*. México: El Colegio de México. https://2010.colmex.mx/16tomos/VII.pdf.

Mancera, C. (2018). La Reforma Educativa: su pertinencia, implementación y perspectivas. In O. Granados, X. P. de la Mora, & E. Betanzos (Eds.), *Fortalecimiento de derechos, ampliación de libertades. Reforma Educativa. Reforma en Materia de Transparencia. Reforma en Materia de Combate a la Corrupción* (pp. 26–124). México: Fondo de Cultura Económica.

Moe, T. M. (2017). The comparative politics of education: Teachers unions and education systems around the world. In T. M. Moe & S. Wiborg (Eds.), *The comparative politics of education*. Cambridge: Cambridge University Press.

Nair, P. (2014). *Blueprint for tomorrow: Redesigning schools for student-Centered learning*. Cambridge, MA: Harvard Education Press.

Nuño, A. (2018, November). Respuesta a *Nexos.* La reforma educativa. In *Nexos* 491. https://www.nexos.com.mx/?p=39966.

OECD. (2014). *Mexico. Country note. Results from TALIS 2013*. Paris: OECD Publishing. https://www.oecd.org/mexico/TALIS-2013-country-note-Mexico.pdf. Accessed 26 Oct 2018.

OECD. (2016). *Improving school leadership and evaluation in Mexico: A state level perspective from Puebla*. Paris: OECD Publishing. https://www.oecd.org/education/school/Improving-School-Leadership-and-Evaluation-in-Mexico-A-State-level-Perspective-from-Puebla.pdf. Accessed 24 Feb 2019.

OECD. (2018a). *Strong foundations for quality and equity in Mexican schools*. Paris: OECD Publishing. Paris. https://www.oecd.org/centrodemexico/medios/OECD%20Mexico%20Schools%20Report%20FINAL.pdf. Accessed 26 Oct 2018.

OECD. (2018b). *PISA 2015 results in focus*. Paris: OECD Publishing. https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf. Accessed 4 Sept 2018.

Ornelas, C. (2003). Las bases del federalismo y la descentralización en educación. In *Revista Electrónica de Investigación Educativa* 5, Núm. 1 (2003). https://redie.uabc.mx/redie/article/view/73/1256.

Ortega, S. B. (2018). Educación Media Superior en la educación obligatoria de México. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 194–291). México: Secretaría de Educación Pública.

Padilla-Romo, M. (2016). The Short and Long Run Effects of Full-Time Schools on Academic Performance. In *Three Essays on Applied Microeconomics*. PhD diss., Texas A&M University. https://oaktrust.library.tamu.edu/bitstream/handle/1969.1/161499/PADILLAROMO-

DISSERTATION-2017.pdf?sequence=1&isAllowed=y . Accessed 24 Feb 2019.
Ramírez-Raymundo, R. (Ed.). (2013). *La reforma constitucional en materia educativa: alcances y desafíos*. Instituto Belisario Domínguez, Senado de la República: Mexico. http://bibliodigitalibd.senado.gob.mx/bitstream/handle/123456789/2937/La_Reforma_Constitucional_en_Materia_Educativa.pdf?sequence=1&isAllowed=y . Accessed 26 Feb 2018.
Reimers, F. (Ed.). (2017). *Empowering all students at scale*. Charleston: Create Space.
Reimers, F. (2018). Reformar la escuela pública para el siglo XXI. Los desafíos para México. In O. Granados, X. P. de la Mora, & E. Betanzos (Eds.), *Fortalecimiento de derechos, ampliación de libertades. Reforma Educativa. Reforma en Materia de Transparencia. Reforma en Materia de Combate a la Corrupción* (pp. 125–166). México: Fondo de Cultura Económica.
Reimers, F. M., & Chung, C. K. (2016). *Teaching and learning for the twenty-first century: Educational goals, policies, and curricula from six nations*. Cambridge, MA: Harvard Education Press.
Sada, A. (2013). Explainer: What Is the *Pacto por México*?". In American Society, Council of the Americas, *Newsletter*, March 11. https://www.as-coa.org/articles/explainer-what-pacto-por-m%C3%A9xico. Accessed 26 Oct 2018.
Santiago, P., McGregor, I., Nusche, D., Ravela, P., & Toledo, D. (2012). *OECD reviews of evaluation and assessment in education México 2012*. Paris: OECD Publishing. https://www.oecd.org/mexico/Mexico%20Review%20of%20Evaluation%20and%20Assessment%20in%20Education.pdf. Accessed 26 Feb 2019.
SEP. (2017). *Modelo Educativo para la Educación Obligatoria: Educar para la libertad y la creatividad*. México: Secretaría de Eduación Pública. https://www.gob.mx/cms/uploads/attachment/file/207252/Modelo_Educativo_OK.pdf. Accessed 1 Jan 2018.
SEP. (2017a). *Los Fines de la Educación en el Siglo XXI*. México: Secretaría de Eduación Pública.
SEP. (2017b). *Aprendizajes clave para la educación integral: plan y programas de estudia para la educación básica*. México: Secretaría de Eduación Pública. https://www.planyprogramasdestudio.sep.gob.mx/descargables/APRENDIZAJES_CLAVE_PARA_LA_EDUCACION_INTEGRAL.pdf. Accessed 25 Feb 2019.
SEP. (2017c). *Comunicado 191. Anuncia Nuño Mayer recuperación de 44 mil 76 plazas docentes que estaban irregulares*. https://www.gob.mx/sep/prensa/comunicado-191-anuncia-nuno-mayer-recuperacion-de-44-mil-76-plazas-docentes-que-estaban-irregulares?idiom=es. Accessed 26 Oct 2018.
SEP. (2017d). *Ruta para la implementación del Modelo Educativo*. México: Secretaría de Eduación Pública. https://www.gob.mx/cms/uploads/attachment/file/207248/10_Ruta_de_implementacio_n_del_modelo_educativo_DIGITAL_re_FINAL_2017.pdf. Accessed 25 Feb 2019.
SEP. (2017e). *Aprendizajes clave para la educación integral: Educación Inicial: Un buen comienzo. Programa para la educación de las niñas y los niños de 0 a 3 años*. México: Secretaría de Eduación Pública. https://www.planyprogramasdestudio.sep.gob.mx/descargables/biblioteca/inicial/1Educacion-Inicial_Digital.pdf. Accessed 25 Feb 2019.
SEP. (2017f). *Planes de estudio de referencia del marco curricular común de la Educación media superior*. México: Secretaría de Eduación Pública. https://www.gob.mx/cms/uploads/attachment/file/241519/planes-estudio-sems.pdf. Accessed 25 Feb 2019.
SEP. (2018a). *Educación en México 2013–2018: Balance y perspectiva*. México: Secretaría de Eduación Pública.
SEP. (2018b). *Principales Cifras del Sistema Educativo Nacional, 2017–2018*. México: Secretaría de Eduación Pública.
Silveyra, M., Yáñez, M., & Bedoya, J. (2018). *¿Qué impacto tiene el Programa de Escuelas de Tiempo Completo en los estudiantes de educación básica: Evaluación del programa en México, 2007–20016*. Grupo Banco Mundial: México.
Tello-Díaz, C. (2018). Cuando no esté aquí. In *Nexos* 480, (January). https://www.nexos.com.mx/?p=35343.

The Economist. (2014, April 7). *Education in Mexico: Phantom Teachers*. https://www.economist.com/americas-view/2014/04/07/phantom-teachers. Accessed 3 Aug 2019.

Treviño, J., & Velasco, P. (2018). Educación Básica: La escuela al centro. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 130–153). México: Secretaría de Educación Pública.

Tuirán, R. (2018). Equidad e inclusión en el ámbito educativo. In *SEP, Educación en México 2013–2018: Balance y perspectiva* (pp. 238–263). México: Secretaría de Educación Pública.

UNDESA, UNDP, UNESCO. (2012). *Governance and development. Thematic Think Piece.* http://www.un.org/millenniumgoals/pdf/Think%20Pieces/7_governance.pdf. Accessed 1 Jan 2018.

UNESCO. (2009). *Overcoming inequality: Why governance matters; EFA global monitoring report, 2009*. Oxford: Oxford University Press. https://unesdoc.unesco.org/ark:/48223/pf0000177683. Accessed 1 Jan 2018.

Uribe, C., Lopez-Cordova, E., Mancera-Corcuera, C., & Barrios-Belmonte, M. (2012). *México: Retos para el Sistema Educativo 2012–2018*, BID, PPT presentation. http://federalismoeducativo.cide.edu/documents/97536/36092cfa-7133-449f-be68-72dd4dd1d9d1. Accessed 26 Jan 2019.

Weber, M. (1968). *Economy and society*. Berkeley: University of California Press.

Webster, A., D. McNeish and S. Scott with L. Maynard and S. Haywood. (2012). *What influences teachers to change their practice? A rapid research review*, National Centre for Social Research for Centre for Understanding Behaviour Change, Short Policy Report No. 12/07 (February). https://www.bristol.ac.uk/media-library/sites/cubec/migrated/documents/pr7.pdf. Accessed on 25 Jan 2019.

World Bank. (2017). *Poland catching-up regions. Overview report*. Washington, DC: The World Bank. http://documents.worldbank.org/curated/en/693011496056300360/pdf/115314-WP-OverviewENvwww-PUBLIC-ENGLISH.pdf. Accessed 9 Nov 2018.

Chapter 6
Peru: A Wholesale Reform Fueled by an Obsession with Learning and Equity

Jaime Saavedra and Marcela Gutierrez

Abstract After decades of expansion, the Peruvian education system had relatively high levels of access, but low and heterogeneous quality. The depth of the learning crisis was seen in 2013, when Peru ranked last in PISA. The country responded by implementing an ambitious reform which built on previous efforts, which is described in detail in this chapter. The reform was composed of four pillars: (i) Revalorize teachers' career by making selection and promotion meritocratic, attracting the best into the profession, and supporting teacher professional development through school-based coaching; (ii) Improve the quality of learning for all by revising the curriculum, expanding early childhood education and full-day schooling, providing direct support to schools (through lesson plans and school grants) and carrying out several deep institutional reforms to the university system; (iii) Effective management of the school and the education system, including the use of learning assessment data for school planning. This entailed increasing school autonomy, introducing meritocracy in the selection of principals, and creating a culture of evidence-based decision making; and (iv) Close the infrastructure gap. The reform process required strong political and financial commitment and resulted in impressive improvements in student learning. Most importantly, it led to a change in mindsets towards a focus on learning.

6.1 Introduction

Peru has been growing steadily for the last 20 years, but economic growth has not been accompanied by a strong investment in human capital. During this time, there was a large expansion of the education system and enrollment rates steadily increased. However, financial investments were not accelerating at the same pace, and expenditures per pupil gradually fell. It was a clear case of a quantity and quality trade-off. Today, more children are in school, with net enrollment rates close to 100% at the primary level and 80% at the secondary level. Peru is a middle-income

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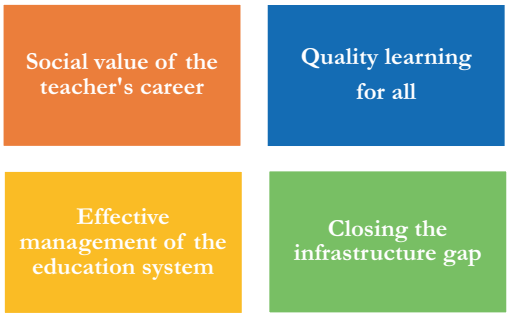

Fig. 6.1 Pillars of Peru's education reform

country which implemented first generation reforms that fostered economic growth since the nineties, but that did not include other structural reforms aimed at promoting equality of opportunities. Educational opportunities had expanded, but quality was low and heterogenous. There was more schooling, but not enough learning. There were more seats, but schools and teachers were not equipped to support children in developing the competencies, abilities and knowledge required to reach their fullest potential.

Since 2003, Peru has implemented a national system to measure learning rigorously using a national standardized exam for all 2nd grade classrooms. Results consistently showed learning rates were low and relatively flat. But in November of 2013, Peru had its PISA shock when the 2012 PISA results were released after a ministerial change. Peru was in last place of all the 65 countries that had taken PISA – not the bottom 10% – but last. This was a shock for the country. The government could have decided to downplay the results, in saying 'but Peru has improved more than any other country since 2009' – which was true- or 'but we are better than many countries that didn't even take PISA' or 'it is an OECD examination that is alien to Peruvian culture and interests'. But that was not the chosen route. Instead, the government decided to own the problem and use these results to say "Look, we're not in trouble. We're in deep trouble." Education was on the front page of the main newspaper of the country. And education is never on the front page of the newspaper.

Peru subsequently went through an education reform process, which is still in the process of implementation, guided by an obsession with improving learning. The reform that was envisaged had four lines of action which needed to be pursued simultaneously and comprehensively: (i) revalorization of teachers' career; (ii) improvement of the quality of learning for all; (iii) effective management of the school system; and (iv) closing the infrastructure gap (Fig. 6.1).

The elements of the reform were consistent with a continuation of the National Plans that had been developed in previous years in consultation with many actors across the country (including the *Plan Nacional de Educación para Todos 2005–2015*). However, the reform still had to be well understood by the general public, teachers, businessmen, journalists, and the government itself. There was a perception that public education quality was low, that this was an inevitable fate,

and that the sector was condemned to mediocrity. Actually, in the Annual Conference of Business Executives (CADE, for its acronym in Spanish) of 2012, one of the discussion topics was how the private sector could be used as a provider of education, given the understanding that the reforms needed in the public sector were short of impossible. So not only was a reform needed, but the reform had to be well-communicated and implementable, to clearly demonstrate to the public that change in the public sector- and improvement – was possible. There had to be a plan, but as important as that, there had to be a public perception that there was a clear and an implementable plan.

The low learning levels were accompanied by a very large heterogeneity in quality. Peru, as a highly unequal country, could trace a large portion of that inequality of outcomes to a profound inequality of opportunities. Parental socioeconomic background, location and ethnicity determined the quality of a child's education, as well as access to early childhood and tertiary education. For instance, differences in quality between public and private institutions were large, and even within those categories there was a lot of heterogeneity. Differences in quality between urban and rural schools were also immense. Given these inequities, the reform described here from 2013–2016 focused on improving the public system and provide more opportunities for the poor to access quality education.

There were many shortcomings of public education at the start of the reform. First, the school infrastructure was in a very poor condition; in part, because despite some investments over the years, current expenditures to maintain buildings were not included in the public budget. Textbooks were insufficient and would not arrive on time to all schools, and in many cases, there were school supplies' shortages. Almost all current expenditures were for teachers' salaries.

From the public's perspective, most of the problems of public education could be attributed to the lack of preparation and commitment of public teachers, who were seen as a group of unionized traditional public servants who only cared about their labor rights and job stability and not children's learning. In fact, there was a group of teachers that fit this perception, but many did not. There was a problem of motivation and low salaries, but there were also many teachers that were in the profession because of an intrinsic motivation. And the magic of learning comes from the interaction between teachers and students. Thus, reforming the teacher career path, attracting talented individuals to the profession, and getting the best possible performance out of the existing teachers were key elements of the reform.

6.2 Increasing the Social Value of the Teaching Career

A school is as good as its teachers. In the United States, students in a class with an effective teacher advance 1.5 grade levels or more over a single school year, compared with just 0.5 grade levels for those with an ineffective one (World Development Report 2018). Similar effects of the quality of teachers on learning are also found in Ecuador, Uganda, Pakistan and India (Bau and Das 2017).

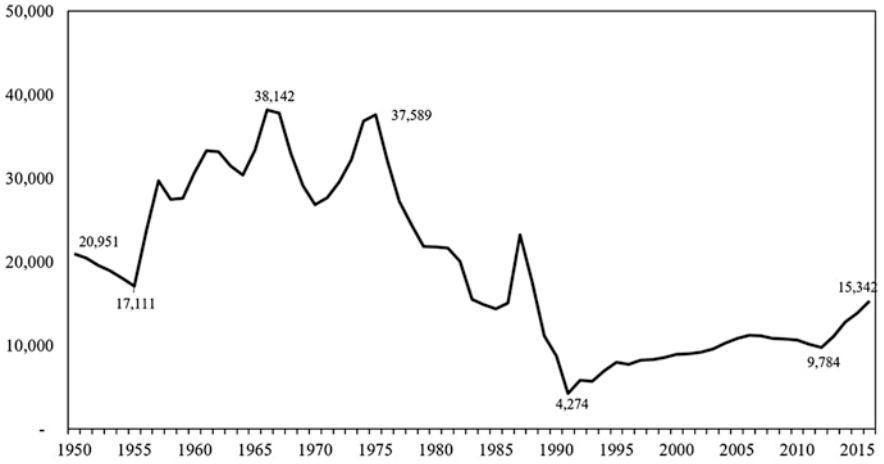

Fig. 6.2 Annual Peruvian teacher salary 1950–2016 (in constant prices of 2011, $). (Reproduced from Ñopo 2017, adapted and updated from GRADE (2004))

Beteille and Evans (2019) find that some of the most effective interventions to improve student learning rely on teachers. They compare the effect of three types of programs on student learning in low- and middle-income countries: teacher-driven interventions (e.g. structured pedagogy), community-based monitoring, and computer-assisted learning programs. They find that while teacher-driven interventions raised student's language scores by around 9 months, community-based monitoring had half the effect and computer-assisted learning program less than one-twentieth. This is supported by other evidence, such as an analysis of the education systems with the best global performance, which concluded that country's learning levels depend on the quality of teachers and that the best interventions to improve learning involved teacher training (Barber and Mourshed 2007).

Despite this evidence, the teaching profession in Peru is not well paid. Professionals with similar characteristics to teachers in Peru received an average salary which was 42% higher than Peruvian teachers'. In fact, Peru is the second Latin American country with the greatest wage gap between teachers and other professionals (Mizala and Ñopo 2016) (Fig. 6.2).

Until the 1970s, a teaching career was a typical profession in an emerging middle class. However, with the massification of education that started in that decade, teachers' salaries started falling slowly in real terms. By 2010, teachers' salaries were about one-third of what they were in the late 1960s (in real terms). The career lost social recognition slowly but steadily. Standards to hire teachers in the public system were lowered and the quality of pre-service institutions fell, while the number of institutions (including universities) increased. Teacher incentives were not related to performance or professionalism, and – most importantly – were not linked

in any way to student learning. A survey applied by IPSOS, a polling firm, in 2015[1] showed that most Peruvians did not have a positive perception of teaching: 30% believed teachers in public schools did low or very low-quality work, 55% believed teaching was an easy job, and 64% would not want their children to pursue a teaching career, especially among those of higher socioeconomic status. Additionally, teachers themselves had a poor perception of their job: 63% thought that society minimizes the value of their profession and 53% would not want their children to become teachers.[2] Overall, Peruvian society looked upon teaching as a poor career choice.

Low wages and low social value, among others, decreased youth's interest in pursuing a teaching career. Between 1999 and 2012, the percentage of teachers under 35 years-old fell from 51% to 21%. In the same period, the percentage of teachers over age 44 increased from 15% to 47%.[3] Worryingly, the best graduates of secondary school did not describe teaching as their preferred professional path.

This situation is not unique to Peru. Elacqua et al. (2018) document this widespread phenomenon in Latin America. They observe that the rapid expansion of coverage between 1960 and 1980 required hiring a larger number of teachers. This could only be achieved by decreasing the standards to become a teacher and increasing the number of teacher training institutions- often without much regulation. As per pupil expenditures went down, the working conditions of teachers also decreased. Both factors contributed to the loss of prestige of the teaching career.

Elements of the reform to increase the social value of the teaching career:

- Ley de Reforma Magisterial
- Teacher Vocation Scholarship
- Evaluation for entering career
- Teacher promotion evaluations
- School Bonus
- Teacher Professional Development

The Teacher's Reform Law (the *Ley de Reforma Magisterial*) was passed in 2012. The Law aimed to attract and retain the best candidates into the teaching profession implementing a new teaching career pathway based on meritocracy. In this new pathway, entrance to the profession is based on teachers' effort and performance, and retention and promotion is related to performance, not only tenure and age. It also included a new scheme of professional development.

[1] IPSOS, 2015. This survey was requested by the Ministry of Education in 2015 and covered 16 cities.

[2] *Encuesta Nacional a Docentes de Instituciones Educativas Públicas y Privadas* (ENDO), 2014.

[3] Calculations from the Ministry of Education using the ENAHO 1997–1999 and 2010–2012.

6.2.1 Attracting and Selecting the Best Candidates into the Teaching Profession

To incentivize secondary school graduates to become teachers, the Ministry launched the Teacher Vocation Scholarship (*Beca Vocacion de Maestro*) in 2014. This scholarship offered full merit-based funding for undergraduate studies in pedagogy in the best universities of the country. About 500 scholarships were awarded per year. Although it was a small number, it was a signal that the public sector was starting to attract good students into the career.

A huge challenge was the implementation of the mandates of the law, including executing a fair and transparent process of recruitment and retainment, intensifying in-service training, and improving the social value of the career (Vargas and Cuenca 2018). The first evaluations to enter the public teaching profession were implemented in 2015. There were 202,000 applicants for 19,632 government teaching jobs. Teachers were evaluated through a written test that measured their basic skills (reading comprehension and logic), curricular knowledge, pedagogy and specialty. Those with a minimum score went through a second phase of evaluation which required teaching a class and being directly assessed by peers. To ensure that the best performers joined the teaching career, the Ministry granted an economic incentive of USD 6000 to the top third of the teachers with the best scores in the examination process.[4] This was consistent with a broader government strategy of giving more incentives to the best candidates to join the teaching career.

There were 20,000 job posts available but only 8137 teachers (out of the 202,000 applicants) were selected. This implied an entry rate of 4%, which was more demanding than that of the most prestigious universities. Fifty-four percent went to work in rural schools. This process was complex from a pedagogical as well as a logistical perspective. It is not easy to correctly discern the best professionals with a written examination -which was used as a first stage, but it was too difficult to implement other methods given the numbers involved. Importantly, it was critical for the acceptance of the reform for the process to be perceived as fair, transparent and free of any hint of corruption or clientelism as had been common practice in the past. Part of the success of the process was that public opinion, and most importantly, teachers, saw this process as meritocratic and free of any political interference.

6.2.2 Rewarding Teacher's Performance and Effort

The first teacher promotion contests in more than 20 years were held in 2014. For the first time, promotions were not defined by years of service. More than 180,000 teachers participated, taking a written exam simultaneously in over 60 cities. Around

[4] This was done through the Bonus of Attraction to Public Teaching Post (*Bono de Atracción a la Carrera Magisterial*).

one third received a promotion, moving forward in the teaching career scale and achieving an average salary increase of 32% (the actual raises ranged from 70% to 0%). In the previous 5-year period, the salary increase had been only 8%, and mostly flat. The exams were transparent, objective and fair, and there was no hint of corruption or clientelism. In the next 3 years, 11 evaluation processes were held with several opportunities for teachers to raise their salaries.

To incentivize teachers' effort and their focus on learning, a school bonus (*Bono Escuela*) was awarded to all teachers and principals who taught in schools that attained the largest student gains.[5] The bonus was given to the top third of schools, which were ranked among schools of the same regions and according to changes in enrollment and retention rates, and well as school learning scores. A rigorous impact evaluation by León (2016) found that this incentive had a statistically significant positive impact on student learning, as well as on attendance of teachers and principals.

But incentives were not only monetary. The relationship with the union was complex but in general positive. To start, the union could have boycotted all examinations and evaluation processes, which didn't happen. Teachers, including union leaders, participated massively. The position of the Ministry was that teachers were part of the solution. Any improvement in quality of education depended necessarily on increased teacher participation and performance; all material inputs needed were important, but the human factor was the most critical. Teachers were partners in the reform. That was the constant message. Teachers were going to be better rewarded, but this would be based on performance and student learning. Some symbols were important. For example, there was a policy aimed at communicating directly with teachers. At the beginning of the school year, a text message to 180,000 teachers was sent across Peru saying "Maria, you are critical for education in Peru. We count on you to make sure that our students are the best. Signed, Jaime". Previously, teachers would have never received a personalized message from the minister. More opportunities were also established for teacher to show and share innovations, good practices and new ideas through national contests. Additionally, greater emphasis was placed on teacher health and welfare issues.

6.2.3 Teacher's Professional Development

The Ministry of Education approved new policy guidelines for in-service teacher training which present an articulated plan of systemic and diversified training which tackles the needs of new teachers and accompanies those that are already in classrooms by promoting a deepening of their knowledge and competencies.

[5] The School Bonus (*Bono Escuela*), implemented between 2014 and 2015, was received by 30,000 teachers and principals in more than 8000 primary schools. The bonus varies by type of educational institution and teacher (position and grade) oscillating between one and two monthly salaries.

For the first time, in 2016 the Ministry implemented a Teacher Induction Program directed to those with less than 2 years of experience in public school teaching. This program aims to strengthen their professional and personal competencies, ease their labor insertion and promote their commitment and institutional responsibility. Experienced teachers act as mentors to new teachers for 6 months. In addition, new teachers can access online materials and remote guidance. In 2018, the program served 1694 newly hired teachers in 1559 schools and 26 regions.[6]

Further, in 2014 the Ministry also started implementing a continuous professional development program for teachers in community-based early childhood education centers and single-teacher/multi-grade primary schools. This is a school-centered permanent coaching program. It aims to provide planned, continuous, pertinent and contextualized guidance to teachers working in complex settings. The intervention includes school visits where immediate feedback is given to teachers after classroom observation, micro-workshops and courses, and refresher programs. Majerowicz and Montero (2018) evaluated this intervention and found it increased student learning outcomes between 0.25 and 0.38 standard deviations as measured by standardized tests. Importantly, the gains are not centered in high-performing students and benefit low-performing students equally. The author estimates that the impact persists for at least 1 year after the training ends. The program is relatively cost-effective with benefits that range from 0.72 to 1.12 standard deviations per 100-dollar investment, even taking into account teachers exiting the school system and the fact that training will wear off or become obsolete.

6.3 Improving the Quality of Learning for all

Peruvian schools aim to educate students who can innovate, be creative, ask questions and shape their own opinions. Students who have the tools to make the best use of their potential when becoming part of an increasingly challenging world. Students who later become engaged and caring citizens, committed to the development of the country. Achieving this requires a quality system which is guided by a modern curriculum. A system that gives every child the education that they require – which might not be the one required by others.

Elements of the reform to increase the social value of the teaching career:

- Curriculum update
- Pedagogical support to primary schools
- Full-day secondary schools
- Equality: bilingual intercultural education, special basic education, high performance schools, and alternative basic education
- Expansion of Early Childhood Education (ECE)
- Institutional arrangements for quality in higher education
- National Program of Scholarships and Educational Credit

6.3.1 Curriculum Update

The process of reforming the National Curriculum (NC) starts in 2010, with the development of the learning standards (Tapia and Cueto 2017). Building on these advances to elaborate a new NC, the Ministry of Education carried out a nationwide consultation process between 2012 and 2016 with national and regional public sector institutions (including the National Council of Education), civil society, teachers, as well as national and international experts in curriculum structure and content (MINEDU 2017). In addition, the new NC took into account the results of reviews of curricula from a variety of countries and regions. The new NC was approved in June 2016. The NC establishes the learning outcomes that students are expected to reach by initial, primary, and secondary education. The NC is comprised of the "Exit Profile" of students of basic education, the cross-cutting approaches, and the curricular programs -per cycle of education- to develop the required competencies, among other components.

The "Exit Profiles" for students define 11 learning outcomes that students must reach by the end of basic education:

- The student recognizes herself as a valuable individual and identifies with her culture across different contexts.
- The student recognizes her rights and duties and understands the historical and social processes of Peru and the world.
- The student practices an active and healthy lifestyle, takes care of her physical health through day to day activities or sports.
- The student values artistic works and understands their contribution to culture and life in society. She is able to use art to communicate her ideas.
- The student communicates in her mother tongue, in Spanish as her second tongue (when her mother tongue is different), and in English as a foreign language.
- The student inquires and understands the natural and artificial world using scientific knowledge in dialogue with local knowledge to improve livelihoods and preserve nature.
- The student interprets reality and makes decisions based on mathematical knowledge adapted to her context.
- The student coordinates economic or social entrepreneurship projects in an ethical manner. These allow her to connect to the job market and the environmental, social, and economic development of her livelihood.
- The student responsibly uses communication and information technologies to learn and communicate.
- The student develops autonomous processes of learning to continuously improve her learning outcomes.
- The student understands and appreciates the spiritual and religious dimension of peoples' lives and society.

The NC included seven cross-cutting approaches that should inform the pedagogical work of teachers in the classroom and relate to the competencies students should develop to achieve the exit profile (MINEDU 2016):

- Rights-based approach: Promotes the recognition of rights and duties of the student and promotes other democratic values such as liberty, responsibility, and collaboration.
- Inclusive and diversity aware approach: Teaches students to value all people equally and to avoid discrimination, exclusion, and inequality of opportunities.
- Intercultural approach: Promotes the interchange of ideas and experiences emerging from diverse cultural perspectives.
- Gender equality approach: Recognizes the need for equality of opportunity between males and females.
- Environmental approach: Seeks to educate students to take care of the environment.
- Common good approach: Promotes the development of socio-emotional skills such as empathy, solidarity, justice and equity.
- Pursuit of excellence approach: Incentivizes students to give their best effort to achieve their goals and contribute to their community.

There were several structural changes between the new NC and previous versions (Tapia and Cueto 2017). First, there was a stronger focus on learning, with a clear definition of learning process maps and standards that guided the expected levels of achievement per education cycle. The NC was competency oriented and practical. A competency is mastered through integrated learning resources and not through fragmented or disjointed teaching. There was a focus on progression and continuity in the student's learning process and a strong emphasis on in-class assessment as part of the overall planning and as a source of information to guide pedagogical practices on a day-to-day basis, and not only at the end of each cycle. Finally, gender equality was included as a cross-cutting approach. The objective was to emphasize the existence of similar rights, duties and opportunities for boys and girls, men and women. The Ministry of Education faced opposition by social conservative groups and was accused of promoting a "gender ideology" to destroy family principles (The Economist 2017), in part because of the inclusion in the curriculum of the teaching of tolerance and respect for sexual orientation and sexual education, which was a critical task in a country with very high levels of teenage pregnancy and gender-based violence. Political pressure led to some minor language modifications of the curriculum in March 2017 around concepts such as gender, sex, and sexuality.

The Ministry of Education planned for a progressive and gradual implementation of the NC, as it required a change in teaching practices. The NC was first implemented in 2017 in public and private primary schools in urban areas of the country, and after 2019 the Ministry expects to implement it in all modalities and school levels (RM 712–2018, MINEDU).

English and Physical Education
In 2015 the National English Language Use and Teaching Policy was approved. Instead of teaching English for 2 h per week, high schools with full day schooling now include 5 h of English per week, using a blended learning system that combines self-learning software and face-to-face sessions. To provide this service, between 2015 and 2016 nearly 3000 face-to-face and virtual teachers were trained. 800 of these teachers participated in summer and winter school face-to-face trainings provided by the British Council and Pearson. Nearly 600 teachers were awarded scholarships to the United States and the United Kingdom, countries with which government-to-government agreements were signed.

The National Plan for Strengthening Physical Education and School Sports includes the extension of class time to 5 h, as well as teacher training and the provision of sports equipment. As of 2016, 5076 physical education teacher slots had been created nationwide and 500,000 children and adolescents between 7 and 17 years of age performed physical training in adequate conditions. With this effort, which started in 2014, Physical Education returns to the regular curriculum, after being abandoned at the end of the 80s.

6.3.2 Pedagogical Support to Primary Schools

To improve the quality of the learning process in primary schools, the Ministry implemented a Pedagogical Support (*Soporte Pedagpogico)* strategy with the following components: (i) support for teachers and principals through sample lesson plans to guide and facilitate teachers' work, training workshops for primary school teachers to foster creativity and innovation in pedagogical practices, mentors or coaches to guide teachers in their classrooms, peer-learning groups with teachers and principals, and virtual pedagogical counseling; (ii) personalized math and language tutoring for students in grades 1 through 3 with different learning styles; (iii) delivery and use of educational resources; and iv) community and parental involvement activities such as workshops with caregivers where they are taught how to support students' learning in everyday situations, or gatherings where parents and children can have fun and learn together. As of 2016, 1.1 million students (43% of the total students in primary school) from 18 regions are in primary schools with Pedagogical Support.

It should be noted that the use of lesson plans was controversial. Some critics in the educational community argued that prescriptive lesson plans would reduce teacher's autonomy and creativity, and teachers should be free to prepare their classes independently following the guidance of the curriculum. The proposal however, was that the use of the lesson plans was not mandatory; teachers who wanted to prepare classes were welcomed to do so, but the lesson plans could serve as a base to those who could find it useful. The fact was that in most cases the teachers

who complained were those in more advanced grades who did not receive lesson plans. These teachers demanded that lessons plans would be available for them as well.

6.3.3 *Full Day Secondary School (Jornada Escolar Completa, JEC)*

To cope with the rise in secondary school enrollment of the 1970s, the Peruvian secondary school day was divided into three shifts. The full-day secondary school model seeks to improve the quality of the educational service by extending the school schedule from 35 to 45 teaching hours per week which allows for more and better time teaching math, communication, English, sciences, physical education and job training. This model brought to public schools the same hours and school regime followed traditionally in all private schools. The new model includes revamped management with support from psychologists, social workers, tutors and pedagogical coordinators. It also includes better equipment and infrastructure. The model started in 2015 with 1000 schools (345,000 students), reached 1601 schools (more than half a million students) by 2016 and 2001 schools by 2017. The long-term objective is to reach all 8000 public secondary schools in Peru.

To ease the implementation of the curriculum, schools are receiving hardware, software, digital facilities and teacher training that links technology to the curriculum. For example, for the full-day secondary school model, laptops have been acquired and distributed, along with software licenses to integrate ICT in the English, communication, math and science courses. In addition, tablets are currently being distributed to primary schools in 15 regions of the country to be used as an educational resource.

Agüero (2016) evaluates the impact of this program and finds that it improved academic performance in math between 0.14 and 0.23 standard deviation in its first year. The program also had positive effects in communications in the first year, but these were less robust. These results are greater than the effects found in similar interventions in Latin America and are among the highest found worldwide. Importantly, the effects are higher in the poorest districts.

6.3.4 *Initiatives to Provide each Student with the Service That She or He Requires*

In the guiding thread of equality of opportunity, part of the narrative of the reform was that equality of opportunity implied very different services – and different expenditures per student- according to circumstances and needs. One critical dimension in Peru was the huge ethnolinguistic diversity. Peru has 55 native or indigenous

communities which speak 47 different languages (Vílchez and Hurtado 2018). Thus, an important number of children in Peru speaks a language different from Spanish (e.g. quechua, aimara, awajún, shipibo-conibo, asháninka, etc.) at home. By law, all these children have the right to a bilingual intercultural education that teaches them to read and write in their home tongue and in Spanish (which is the national language together with quechua) so that they can fully participate socially and culturally. Peru is one of the countries that has made the most progress in the region in terms of bilingual intercultural education. The country has a strategy of cultural and linguistic strengthening which involves the production of materials, curriculum and teacher training. To date, more than 500 titles (workbooks, books for school libraries, curricular guides for teachers) have been produced in 19 native languages. Likewise, the competences of 9000 teachers have been strengthened through a coaching program. The latter has been rigorously evaluated; and it was found that receiving intercultural pedagogical support has an average impact on students learning of 28 percentage points in math and 21 in reading, which is equivalent to 0.28 and 0.29 standard deviations respectively (Majerowicz 2016a). Despite progress in terms of production of materials, Peru still lacks sufficient teachers that speak both Spanish and a native langue. By 2017, only about half of primary education students who required it had a trained teacher in their native tongue.

The Ministry also implemented a Special Basic Education strategy to serve children with any type of disability. It included, on one hand, strengthening the Special Basic Education Centers and, on the other, promoting the inclusion and increasingly better learning of students with mild or moderate disabilities in regular classrooms. As part of this strategy, 56 regular schools (1500 teachers) that already have expertise in the management of students with disabilities received training in inclusive education and specialized texts for various types of disabilities. In addition, and for the first time, regular schools received the necessary technological equipment to provide a quality service. Interpreters of Peruvian Sign Language have been hired in inclusive schools that serve students with hearing impairment in 7 regions of the country. Between 2015 and 2016, 26 Special Basic Education Resource Centers were created throughout the country to support the work of regular schools with students with disabilities. Between 2013 and 2016, the budget for Special Basic Education tripled, but despite that increase, still only about 25% of children with special needs had the required services.

Third, the Ministry created a network of High-Performance Schools (*Colegios de Alto Rendimiento,* COAR) to serve exceptionally talented youth, similar to magnet schools in the US. COARs were public boarding schools designed to give talented young people the possibility of developing their full potential using a more demanding curriculum. These schools were certified by the International Baccalaureate (IB) which provided an internationally recognized high standard.[7] Each COAR serves 100 students per grade, selected meritocratically by demonstrating their academic, athletic or artistic excellence and covers the last three grades of

[7] https://www.ibo.org/programmes/diploma-programme/what-is-the-dp/

secondary education. IB schools existed previously in Peru but only in a few private fee-based elite schools, so this network provided for the first-time meritocratic access to an IB education for free. Between 2014 and 2016 the system expanded such that there was one COAR per region, serving a total of 4350 students nationwide. After the expansion of the program, there are more students studying in an IB school in the public than in the private system Most teachers in those schools were public school teachers that received additional training but returned to their schools of origin after 2 years. An impact evaluation of this program, implemented by the CAF and the Ministry of Education, is currently underway.

6.3.5 Expansion of Early Childhood Education Services

Access to early childhood education for children aged 3–5 years in Peru was much lower among the poor, so it was a policy priority to expand coverage. From 2011 to 2016, the net attendance rate increased from 73% to 86%. In this period, more than 4150 villages in rural areas received early childhood services for the first time. This led to a complete elimination of the urban-rural access gap. Educational resources and materials were provided to existing and new early childhood centers and more than 3000 teachers were trained on initial education. Rigorous impact evaluations find that participating in public early childhood interventions had a positive effect of 8.7 points in reading comprehension and 2.5 points in math among second grade students (Majerowicz 2016b).

6.3.6 Institutional Arrangements for Quality in Higher Education

The tertiary education system in Peru had expanded during the last two decades. And as observed in many emerging economies, the expansion was fast and chaotic. The system was almost completely unregulated and about 90% of the growth in higher education enrollment was explained by an expansion of the private sector, and with an extreme heterogeneity in quality. After decades of chaos a new university law (*Ley Universitaria)* was promulgated in July 2014. The law defined the Peruvian university system as one of academically autonomous public and private institutions responsible for training professionals and citizens, that prioritized research, and is responsible for contributing to solving the country's development challenges.

The *Quality Assurance Policy of Higher University Education* was also approved, establishing four pillars for quality improvement: (i) Management and Information Systems, (ii) Quality improvement, (iii) Accreditation for continuous improvement and (iv) Licensing as a guarantee of basic quality conditions.

For instance, as part of the first pillar, "*Ponte en Carrera*" (www.ponteencarrera.pe) was launched in July 2015. *Ponte en Carrera* is a virtual platform that offers detailed labor market outcomes information. The portal offers information on the income earned from different careers according to university or technical institute, as well as the characteristics of educational institutions. Yamada et al. (2016) analyze the social value of information using the data of this portal. They find that only 62% of the university-career combinations have a positive economic return. Thus, they estimate a high social value for the portal given that if only 1% of recent graduates that opted for a career in a university with a negative return had instead entered the labor market directly (given that the information of that negative return is now available), they would gain 4.5 million Peruvian soles (USD 1.3 million) additional earnings during their lifetime.

As mandated by the new Law, the National Superintendence of Higher University Education (SUNEDU) was created. This entity is in charge of licensing universities based on basic quality standards and overseeing the proper use of public resources. In the case of public institutions, this is because they are almost exclusively financed by public funds, and in the case of private institutions, because they were exempt of any sales tax and enjoyed an extremely generous income tax regime. In November 2015, the SUNEDU approved the *Basic Quality Conditions*. In December, it approved the *Regulation of Infractions and Sanctions*. The licensing process began in 2016. The vast majority of private universities have adapted their statutes to the new Law, while most public universities have renewed their authorities with the universal voting mechanisms established by the Law.

The approval of the Law and, in particular, the implementation of a new regulatory framework and the establishment of a new regulatory agency was politically very contentious. In a pattern that is observed throughout emerging economies, and in particular in South Asia and Africa, owners of low-quality private universities usually have political representation and were not in agreement with the establishment of basic standards or more stringent supervision of the use of tax exemptions. Despite the government having a relative majority in Congress at that time, the Law was passed by a slim margin, and in part by public opinion being very favorable to the establishment of more effective regulation of universities. The law was contested in court several times and a legal action was filed with the Constitutional Tribunal. In all instances, the University Law was cleared. Moreover, very strong political support was received from student organizations from both public and private universities, who on several occasions vocally expressed their support for the reforms via social media and public demonstrations.[8]

[8] Five years after the Law was approved, about 60 universities obtained a license to operate, several others were under supervision, and 4 universities were under closure process.

6.3.7 National Program of Scholarships and Educational Credit

A government priority was to increase access of the poor to quality higher education. For the first time, a national policy of large-scale public scholarships was established in 2012. The *National Program of Scholarships and Educational Credit* (PRONABEC) delivered almost 100,000 scholarships between 2012 and 2016, reaching an annual budget of USD 280 million, making it one of the largest public fellowship programs in Latin America. PRONABEC has several scholarships including the following:

- *Beca 18* offered full scholarships for undergraduate studies of Peruvian youth with high academic achievement from low socioeconomic backgrounds. From 2011 to 2016, it has financed undergraduate studies for almost 50,000 Peruvian youth with limited resources from 94% of the country's districts. Rigorous evaluations find that the program increases the probability of access to higher education (33 percentage points to universities and 40 percentage points to institutes) and student welfare. Further, those that receive the scholarship tend to access better universities and start studying earlier. However, fellows report higher levels of perceived discrimination and have a lower percentage of approved classes (which could be linked to them accessing higher quality institutions) (MEF 2019).
- *Beca Presidente de la Republica*, supports postgraduate studies (Masters and PhDs) in prestigious universities that rank among the top 400 according to the main global rankings. The scholarships cover all expenses. Applicants must be among the top third of their undergraduate cohort, have an admission letter from a top university, and demonstrate that his/her monthly income is insufficient to pay for their postgraduate degrees. By 2016, it had been awarded to almost 1500 fellows.
- *Beca Docente Universitario* finances Masters and specialization studies for public university teachers in recognized universities in Peru and abroad. By 2016, 11,742 teachers had benefitted.
- In 2015, the *Beca Doble Oportunidad* was launched for young people who did not complete high school. Through it, beneficiaries can finish studying the 5th grade of secondary school and obtain a technical certification.

The Peruvian government also launched an educational loan called *Credito 18* in 2015. It allows young people to access the best universities and institutes in Peru[9] using their own future incomes as a loan guarantee. The program only involves institutions whose graduates have high employability and are willing to guarantee 50/50 of the loan with the state. The credit is only accessed by young people that attain high grades in high school and throughout their university career.

[9] Universidad Católica, Universidad del Pacífico, Universidad Cayetano Heredia, Universidad de Piura, UTEC y TECSUP.

6.4 Effective Management of the School System

The Peruvian education system needs to provide a daily quality service to almost seven million students and their families in 52,000 public schools. In the case of Peru, the public sector provides the service and also regulates private sector provision. Thus, it also needs to regulate the activities of thousands of private providers. Additionally, the system administers 800 technological and pedagogical institutes and regulates almost 150 universities. The system is managed by 3500 staff who work in the Ministry of Education; close to 4000 government officials who work in the 25 Regional Directorates of Education (*Direcciones Regionales de Educacion*, DRE) and 220 Local Education Management Units (*Unidades de Gestion Local*, UGEL); around 380,000 teachers and school principals who work in public schools; and 100,000 teachers and principals in the private sector.

The educational service is a very complex service to provide and regulate. The education system shapes people's lives. It must equip students with knowledge, values and life-skills that enable them to become citizens that define their own destiny and attain a productive and fulfilled life. One thing that is not always emphasized in education reforms is that such a complex service requires a highly qualified multidisciplinary bureaucracy, even in systems where schools enjoy autonomy. The quality of the service, and the implementation of all reforms mentioned in this chapter depends on management. Designing, implementing, evaluating and constantly adapting the provision of services requires a management that allocates tasks and monitors their completion, sets the pace of work and administers human and physical resources effectively.

At the establishment level, the quality of school management has a very high impact on the effectiveness of teachers, on the quality of the service provided, and on the operation of the institution as a whole. Evidence supports this claim: "Correlational evidence from within and across countries…, coupled with a growing number of impact evaluations, show that higher-skilled managers and the use of effective management practices improve teaching and learning. Evidence from across countries participating in PISA supports this idea: moving from the bottom to the top quartile of school management quality is associated with approximately an additional 3 months of schooling for one year alone" (pg. 2, Adelman and Lemos, forthcoming). Barber and Mourshed (2007) reference The National College for School Leadership (2006) regarding their findings of diverse studies which show that schools that achieve good performance in student learning might differ in their management practices, but all share the characteristic of having good school leadership from their director.

Despite the importance of management in the education system, management of public schools in Peru was characterized by a rigid organizational structure in which principals devoted an extremely large amount of time to administrative tasks, which were not centered on learning or flexible to fit the different contexts of the country

(MINEDU 2005). Principals also lacked administrative support staff.[10] The principal was supposed to perform many administrative activities in schools where there were no other personnel aside from principals and teachers. In Peru, there were 32,000 administrative staff to support 50,000 schools which means there was less than one administrative staff person per school.[11] This resulted in most principals focusing on routine and administrative work and having little time for pedagogical leadership and human resource management. Regional units faced similar challenges. In fact, in 2013, only 30% of the local education management units personnel provided pedagogical support to schools (the remaining 70% performed administrative tasks).

Elements of the reform to foster effective management of the education system:

- Strengthening school management: boosting the role of principals and hiring administrative staff
- Improving management in the middle and central level: modernizing processes, creating commitments of performance
- Improving data collection and use

The modernization of educational management was focused primarily on strengthening the management of individual schools, recognizing them as complex institutions to administer that required strong and independent leadership and adequate staff. Progress was made in redefining the role of the school principal and improving their selection. For the first time in 2015, 15,000 -in about a third of existing schools- school principal positions were assigned based on a meritocratic process. Further, training processes for principals were improved and school principals started receiving specialized training in school management. Finally, principals received greater autonomy and are now responsible for the use and allocation of minor maintenance and purchase resources, and for the first time they are part of the process of appointing teachers.

To support the role of principals, the reform also included recruitment of administrative workers. In 2015, about 8000 administrative positions (psychologists or social workers, administrators, secretaries, caretakers, cleaning and maintenance staff) were hired for the 1000 secondary schools that benefitted from full-day schooling. This policy continued in the 600 additional JEC schools that started operating in 2016 aiming to gradually close the gap in administrative personnel in schools.

[10] While most private schools have administrative and finance staff, psychologists, security personnel, and coordinators of different tasks, public schools are usually only composed of the principal and its teachers.

[11] Información del personal no docente en primaria y secundaria obtenida del Escale en base al Censo Escolar 2013.

The reform also included improvements to middle management in the education system (the Regional Directorates of Education (DRE) and Local Educational Management Units (UGEL)) and in the Ministry or central level. For example, Performance Commitments (*Compromisos de Desempeño*) were designed as a tool to allow the transfer of additional resources to DREs based on their performance on sector's priority goals. These goals were linked to improving the planning processes, having the conditions for an adequate start of the school year and improving management throughout the year. Further, the Ministry of Education underwent a substantial modernization process which included execution control mechanisms, dashboards and control panels, and a simplification of purchasing processes.

Finally, information systems were strengthened to counter the lack of information about what was effectively happening at the school level, UGEL and DRE levels, and aggregate level. One such initiatives was the School Traffic Light (*Semaforo Escuela*) tool. This management tool collects critical information about school functioning: attendance of students, teachers, principals; availability of educational materials; and access to basic services. During 2015, 32,000 educational institutions were visited and more than 250,000 teachers were interviewed. In 2016, data of more than 10,000 additional schools was added. Currently, the tool covers the entirety of the system. The School Traffic Light generates representative information of the 220 UGELs on a monthly basis and serves as a means of accountability for school principals and the UGEL. The data generated allowed to public data at the UGEL (roughly similar to provincial) and regional level. As expected, initially the publication of data in, say, teacher absenteeism was not well received by some regional governors, but those reactions, were in the long run, a good symptom that the availability of public information creates incentives for governments to increase the quality of its services.

6.5 Closing the Education Infrastructure Gap

Having minimum infrastructure is critical to achieve student learning. Murillo and Román (2011) find that although there are differences between countries, the availability of basic infrastructure and services (electricity, water, sewage) and didactic resources (libraries, labs, sport facilities, books, computers) has an effect on student achievement levels in primary education in Latin America. Leon and Valdivia (2015) use Peruvian data and find a significant effect of school resources on academic achievement. They state that previous estimates of the school effects underestimate the relevance of school resources, particularly on the poorest areas.

Elements of the reform to close the infrastructure gap:

- Census of Educational Infrastructure
- Increased investment
- Program of Maintenance of Educational Infrastructure
- Creation of PRONIED
- Innovative initiatives for specific regions
- Public Private Partnerships and Public Works Tax Deduction Programs

In 2014 the National Institute of Statistics and Informatics (INEI) collaborated with the Ministry of Education to assess the status of the infrastructure of the public education sector for the first time in the history of Peru. The Education Infrastructure Census showed a dire scenario: 7 of every 10 schools needed to be strengthened or reconstructed, 60% of schools had high seismic risk, one third of the plots lacked physical or legal resolution, and more than 80% of rural schools lacked access to water and sewage. After decades of insufficient investment and lack of maintenance, the Peruvian education system accumulated a deficit of basic educational infrastructure of more than US$20 billion approximately 10% of GDP. The number reached USD 23 million when taking on account investments required for the conversion of the whole secondary school system to a single shift, the universalization of early childhood education and the improvements of multi-grade schools - including necessary furniture and equipment (MINEDU 2016).

The government also accelerated its investment in education. From 2011 and 2015, public investment in infrastructure for education – including all levels of government – exceeded the equivalent of USD 5 billion (15,000 million Peruvian soles); 150% higher than in the previous 5 years. These investments financed the rehabilitation or construction of about 4000 schools nationwide. Most of the investments took place in the rural areas: in 2016 the per student investment in infrastructure in rural areas was 6.5 times that of urban areas.

To ensure the sustainability of school infrastructure, the Program of Maintenance of Educational Infrastructure was created in 2012. This program increased the resources received by principals and schools to maintain the school infrastructure. Until 2016, it had financed more than 1800 million Peruvian soles (USD 530 million) in repairs for more than 50,000 schools.

To increase the efficiency of the management of infrastructure investments made by the central government (Ministry of Education) and accelerate the process of closing the educational infrastructure gap, the *National Educational Infrastructure Program* (PRONIED, for its acronym in Spanish) was created in 2014 with administrative and financial autonomy. The institution created standard construction models that increased the speed with which technical construction files were generated and established monitoring systems that tracked every project.

The education reform included innovative infrastructure investments tailored to the needs of particular regions or students. For instance, PRONIED started implementing the *Plan Selva* in 2014. This plan targeted jungle communities which had

amongst the highest infrastructure needs countrywide. Before *Plan Selva*, schools in the jungle were built in the same ways as in cities: with concrete. These structures were not well suited for the jungle as they were not resistant to the heavy rains and reached high temperatures in the summer. The *Plan Selva* designed and built schools that suited the area: made out of wood, with solar panels and special roofs that could withhold the rain and help manage the heavy temperatures; built high above the ground to avoid flooding when the river grew. The first set of ten schools earned second place in the recognized architectural prize of the Venice Biennale (MINEDU 2016).

To increase the speed in closing the infrastructure gap, the Ministry of Education increased cooperation with the private sector through *Public Private Partnership*s (PPPs) and *Public Works Tax Deduction* (*Obras por Impuestos*, OxI). PPPs started being designed in 2014. By 2016, education PPPs were formulated to address the infrastructure challenge for 66 schools, 7 COAR and 3 higher education technological institutes (with a potential investment of 2200 million Peruvian Soles-USD 648 million).

6.6 Financing

In 2003, a National Agreement signed by all political parties, business councils, and civil society organizations agreed to an annual increase in educational expenditures of 0.25% of GDP, starting from a base of about 3% of GDP until reaching 6% of GDP. Ten years later, expenditures were still around 3% of GDP. To implement the educational reform, between 2011 and 2016, the education budget grew from 2.8% to 3.9% as a percentage of GDP, and 88% in nominal terms. This is reflected in the educational budget as a percentage of the total state budget increasing from 15% to 18%. This has been a significant and unprecedented increase.

The increase in resources came accompanied by a higher pressure to spend faster and better. Traditionally, a significant portion of the budget assigned was not effectively spent. To accelerate spending, several measures were taken: there was a mechanism of "single balance window" which allowed ministry units which were underspending to release fund to other units; closer supervision of procurement processes to shorten timelines, and dashboards to identify administrative bottlenecks, among others. This allowed for a dramatic increase in spending of all units under direct control of the ministry (which did not include, for example, public universities which were autonomous in their processes) (Figs. 6.3, 6.4, and 6.5).

The higher spending is reflected in a significant increase in per student spending in the three educational levels (early childhood education, primary and secondary). However, expenditures are still far from other Latin American countries or OECD countries. Despite the significant increase observed between 2011 and 2016, Peru was spending only about USD 1200 per student in primary education – less than Colombia, about half of what was spent in Chile and a fifth of the OECD average. The main route to continue to increase per pupil expenditures is not an increase in

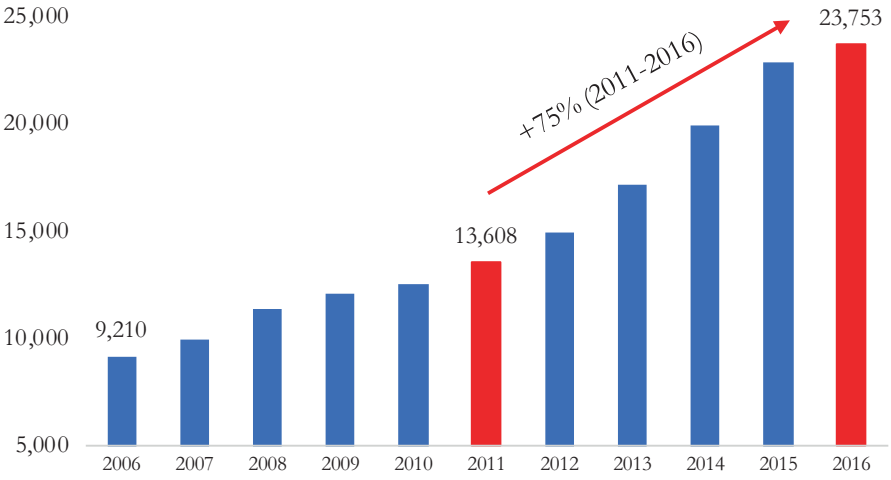

Fig. 6.3 Budget allocated to Education in millions of Soles. (Source: Ministry of Economy and Finance)

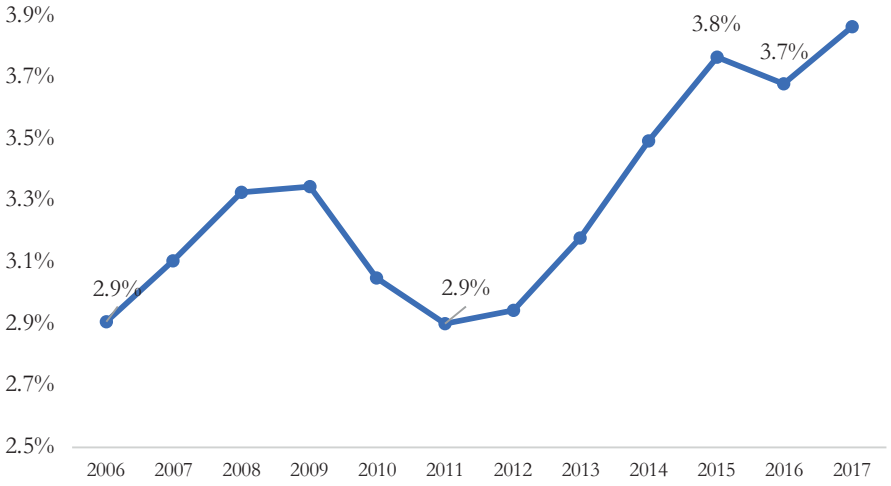

Fig. 6.4 Budget allocated to Education as a percentage of GDP. (Source: Ministry of Economy and Finance)

the share of education in the public budget; there is a small margin as it is already at almost 20% of the public budget. The main routes are to increase the size of the state, which in Peru is relatively small at about 16% of GDP because of low tax collection, and to continue a strong economic growth process.

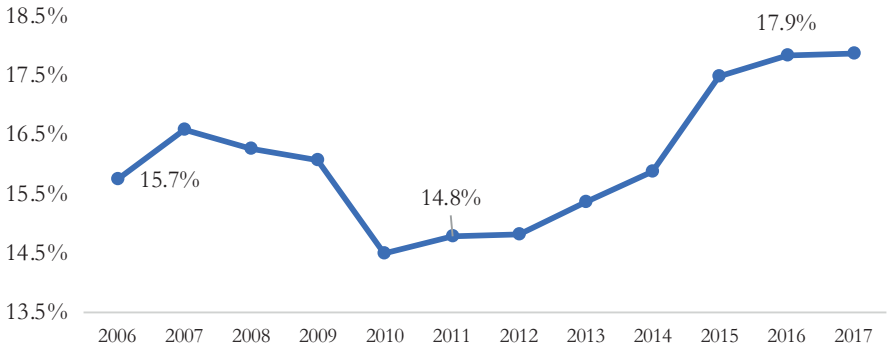

Fig. 6.5 Budget allocated to Education as a percentage of the total public budget. (Source: Ministry of Economy and Finance)

6.7 Results in Student Learning

Peru is the Latin American country with the largest progress in student test scores in PISA (Programme for International Student Assessment) for the period 2009 to 2015.[12] Student outcomes have improved constantly, increasing 8% in reading and science and 6% in math during the period 2009–2015. This growth is reflected in a lower number of students scoring below the minimum competences required to participate in society. This number decreased 10 percentage points in science, 7 percentage points in math, and 11 percentage points in reading. Importantly, Peru's improvement has been particularly stark among public institutions (Moreano et al. 2017). The biggest improvements in PISA scores took place from 2012 to 2015, which coincides with the period in which the reform was implemented (2013–2016). The PISA results are consistent with other assessments. For instance, between 1997 and 2013, Peru participated in three LLECE (Latin American Laboratory for Assessment of the Quality of Education)[13] evaluations. These evaluations measure English, math and science competencies of students in third and sixth grade. When comparing 2013 with 2006, Peru presented substantial improvements in the three areas. A similar trend is seen in the National School Census data which, since 2007 evaluates all children in second grade in the subjects of math and reading comprehension. Between 2007 and 2013, the proportion of students with a satisfactory learning level in reading doubled, and the equivalent proportion in math tripled. In 2014, the largest growth in educational outcomes in the past 7 years was

[12] Peru's average score in Reading increased from 327 to 384 points. Although PISA evaluates math, science and reading competencies, only the latter is comparable across countries.

[13] The First Comparative and Exploratory Regional Study (*Primer Estudio Regional Comparativo y Explicativo*, PERCE) in 1997, the Second Comparative and Exploratory Regional Study (*Segundo Estudio Regional Comparativo y Explicativo*, SERCE) in 2006, and the Third Comparative and Exploratory Regional Study (*Tercer Estudio Regional Comparativo y Explicativo*, TERCE) in 2013.

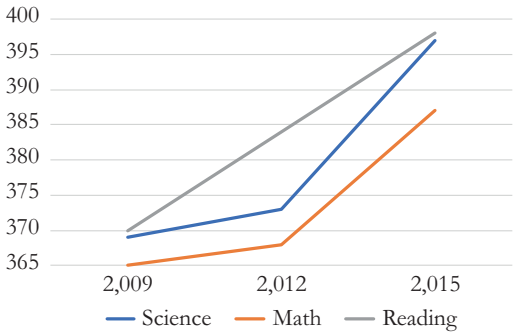

Fig. 6.6 Evolution of Average Scores in PISA, Peruvian Students. (Source: OECD 2017)

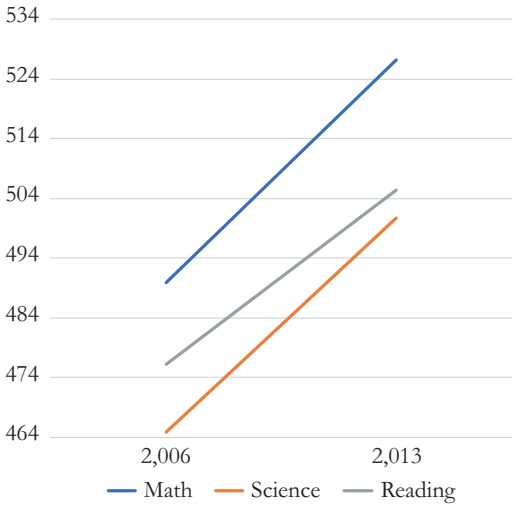

Fig. 6.7 Evolution of Average Scores in LLECE, 6th grade Peruvian Students. (Source: Bilagher 2014)

observed. From 2011 to 2015, the percentage of students who reach the satisfactory level increased from 30% to 50% in Reading Comprehension and from 13% to 27% in Mathematics (Figs. 6.6, 6.7, 6.8, and 6.9).

6.8 Pending Challenges

Despite important recent advances, the challenges ahead are immense. The quality and equity of the Peruvian education system is still far from where it should be. For instance, most students still scored below the minimum proficiency threshold in PISA in 2015. The percentage of students that did not reach basic competencies was 58% in science, 66% in math, and 54% in reading. A similar picture is seen with the National School Census, where the percentage of second-grade children who scored below satisfactory level was 50% in reading comprehension and 73% in math. It

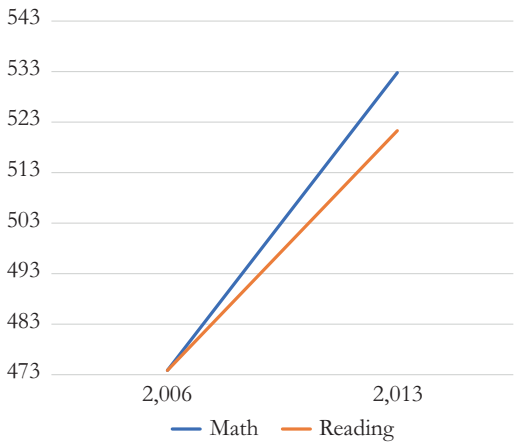

Fig. 6.8 Evolution of Average Scores in LLECE, 3rd grade Peruvian Students. (Source: Bilagher 2014)

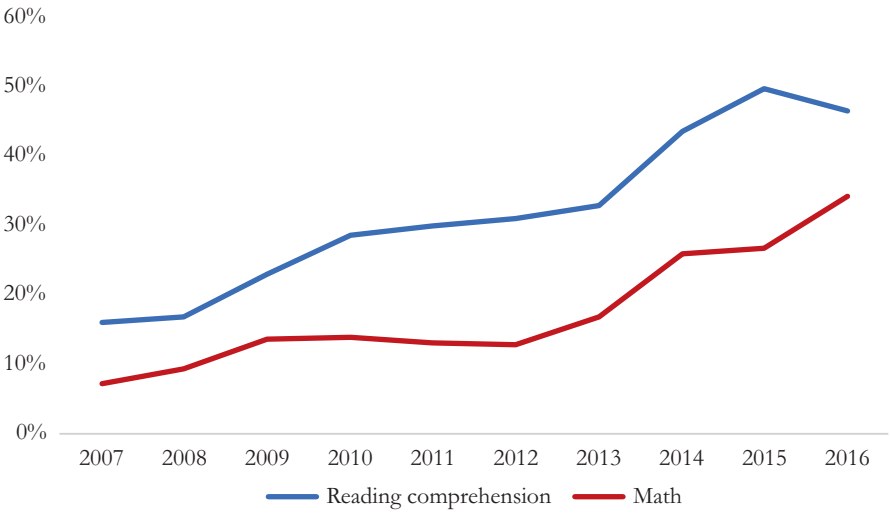

Fig. 6.9 Percentage of students with a satisfactory level in 2nd grade according to the National School Census. (Source: National School Census MINEDU)

was a dramatic improvement compared to previous years but is still an underperforming system.

Moreover, test scores reflect the inequality of the system. In PISA, those of lower socioeconomic background, from rural areas, and who attend public schools score lower than the rest (Moreano et al. 2017). Further, despite improvements, the differences between learning outcomes in rural and urban settings are still very big. Between 2007 and 2014, the percentage of students with a satisfactory level in reading went from 21% to 50% in urban areas, and from 6% to 17% in rural settings. The percentage of students with a satisfactory performance in math went from 9% to 30% in urban areas and 5% to 13% in rural ones (Fig. 6.10).

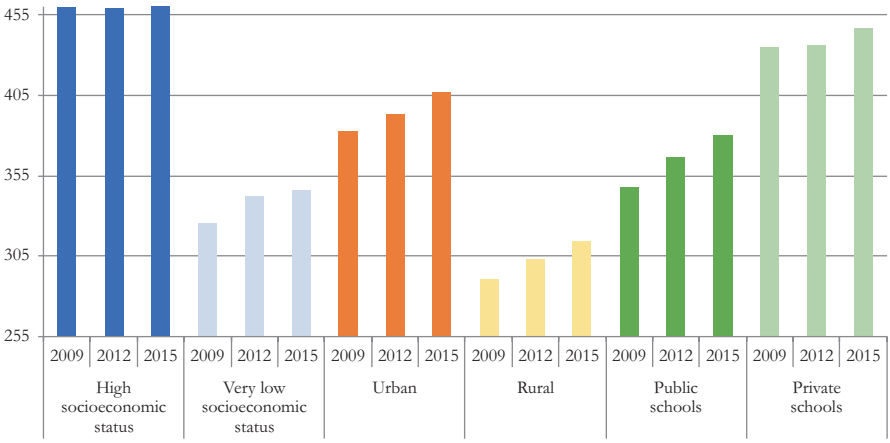

Fig. 6.10 Evolution of average scores in PISA by student and school's characteristics. (Source: Moreano et al. 2017)

Most of the policies described above will take years to be solidified and universalized. Early childhood education coverage is still not universal, especially if one limits the analysis to quality provision. As seen above, basic schooling does not provide each student with basic skills, let alone the opportunities that each student needs to develop to their fullest potential. Bilingualism has started but is still not complete and full-day secondary schooling is still not widespread. Higher education also has limitations both in access and quality. In 2013, only 39% of graduates from secondary school accessed higher education.[14] Those that accessed did not enter a system that guarantees quality: out of the 140 universities in Peru, none is among the 500 best in the world[15] and only 3 are among the 100 best universities of Latin America.[16]

Equity gaps have moved in the right direction. Gaps in access to early child education have closed, more students in secondary public schools have access to a full day school, as in any private school. Poor, talented children have access to a Higher Performance School (COAR) and to public fellowship for university studies. But urban-rural quality gaps in basic education are still large and access to good universities or technical institutions is easier for the rich.

Improving and expanding educational services will require an unprecedented financial effort and political commitment. By 2021, the bicentennial year of Peru, there is a commitment to double teachers' salaries (as compared to 2015). This will require continuing the process of increasing spending efficiency as well as a substantial increase in the budget. But what is most critical is to continue with an obsessive focus on learning and improving the quality of children's experiences in school. Continued investment in teachers requires a deepening of the meritocratic process

[14] Escale- Ministerio de Educación.

[15] QS Ranking 2013.

[16] QS Ranking 2013.

in the selection and promotion of teachers and principals, and a deepening of a culture of continued professional development, if it is expected to have an impact on learning. The institutional changes required have been implemented and there is clear political and public support for maintaining a meritocratic career, free of any political interference or clientelism.

At the tertiary education level, the institutional changes that support the reforms that aim at increasing quality of the system have been advanced, and the political support of young people and the public opinion is clear. However, as in other countries, university reforms with dispersed winners (the current and future students) and concentrated, politically powerful losers (low quality institutions), the threat of change in the political balance is always present.

References

Agüero, J (2016). *Evaluación de impacto de la Jornada Escolar Completa*. Repositorio institucional – GRADE. http://repositorio.grade.org.pe/handle/GRADE/378. Accessed 22 Nov 2019.

Barber, M. & Mourshed, M. (2007). How the world's best-performing schools systems come out on top. McKinsey & Company. https://www.mckinsey.com/industries/social-sector/our-insights/how-the-worlds-best-performing-school-systems-come-out-on-top. Accessed 22 Nov 2019.

Bau, N., & Das, J. (2017). *The misallocation of pay and productivity in the public sector: Evidence from the labor market for teachers*. Washington, DC: The World Bank.

Beteille, T, & Evans, D., (2019). Successful teachers, successful students: Recruiting and supporting society's most crucial professions. The World Bank's policy approach to teachers. http://documents.worldbank.org/curated/en/235831548858735497/Successful-Teachers-Successful-Students-Recruiting-and-Supporting-Society-s-Most-Crucial-Profession.pdf. Accessed 22 Nov 2019.

Bilagher, M. (2014). Resultados comparados SERCE-TERCE. UNESCO Regional Bureau for Education in Latin America and the Caribbean, Santiago de Chile. https://drive.google.com/file/d/0BwzG1KOQMVTlVG5nOUV1LVIzM28/view. Accessed 22 Nov 2019.

Elacqua, G., Hincapie, D., Vegas, E., Alfonso, M., Montalva, V., & Paredes, D. (2018). Profesión: Profesor en América Latina:¿ Por qué se perdió el prestigio docente y cómo recuperarlo?. Inter-American Development Bank.

León Jara-Almonte, J., (2016). *Evaluación de Impacto del Bono de Incentivo al Desempeño Escolar o "Bono Escuela"*. GRADE – Proyecto FORGE http://www.grade.org.pe/forge/descargas/Evaluaci%C3%B3n%20Bono%20Escuela%20Juan%20Le%C3%B3n.pdf. Accessed 22 Nov 2019.

Leon, G., & Valdivia, M. (2015). Inequality in school resources and academic achievement: Evidence from Peru. *International Journal of Educational Development, 40*, 71–84. https://doi.org/10.1016/j.ijedudev.2014.11.015.

Majerowicz, S. (2016a). *Evaluaciones Rápidas de Impacto: Acompañamiento Pedagógico, Soporte Pedagógico Intercultural (ASPI) y Soporte Pedagógico*. GRADE – Proyecto FORGE http://www.grade.org.pe/forge/descargas/evaluaciones%20rapidas%20de%20impacto%20Majerowicz.pdf. Accessed 22 Nov 2019.

Majerowicz, S. (2016b). *Impacto de educación inicial sobre desempeño académico*. GRADE – Proyecto FORGE. http://www.grade.org.pe/forge/descargas/Impacto%20de%20educaci%C3%B3n%20inicial%20Majerowicz.pdf. Accessed 22 Nov 2019.

Majerowicz, S. & Montero, R., (2018). Working Paper. "Can Teaching be Taught? Experimental Evidence from a Teacher Coaching Program in Peru (Job Market Paper). https://scholar.harvard.edu/smajerowicz/publications/job-market-paper-can-teaching-be-taught-experimental-evidence-teacher. Accessed 22 Nov 2019.

MEF. (2019). *Evaluación de impacto del Programa Beca 18 (Cohorte 2015 – Modalidad Ordinaria)*. https://www.mef.gob.pe/contenidos/archivos-descarga/Informe_FINAL_Beca_2015_publicar.pdf. Accessed 26 Aug 2019.

MINEDU. (2005). *Plan Nacional de Educación para Todos, Perú*. Hacia una educación de calidad con equidad. Repositorio MINEDU. http://repositorio.minedu.gob.pe/handle/123456789/323. Accessed 22 Nov 2019.

MINEDU. (2016). *Por una Educación con Dignidad*. http://www.minedu.gob.pe/p/pdf/inversion-en-infraestructura-educativa-2011%E2%80%932016.pdf. Accessed 26 Aug 2019.

MINEDU. (2017). *National curriculum of basic education*. Lima: Ministry of Education.

Mizala, A., & Ñopo, H. (2016). Measuring the relative pay of school teachers in Latin America 1997–2007. *International Journal of Educational Development, 47*, 20–32. https://doi.org/10.1016/j.ijedudev.2015.11.014.

Moreano, G., Christiansen, A., Ramos, S., Saravia, J.C., Terrones, M., (2017). *El Perú en PISA 2015: informe nacional de resultados*. http://umc.minedu.gob.pe/wp-content/uploads/2017/04/Libro_PISA.pdf. Accessed 22 Nov 2019.

Murillo, F. J., & Román, M. (2011). School infrastructure and resources do matter: Analysis of the incidence of school resources on the performance of Latin American students. *School Effectiveness and School Improvement, 22*(1), 29–50. https://doi.org/10.1080/09243453.2010.543538.

Ñopo. (2017). https://twitter.com/hugonopo/status/892767867783041026

Organisation for Economic Co-operation and Development. (2017). *PISA 2015 technical report*. Available at: http://www.oecd.org/pisa. Accessed 26 Aug 2019.

Tapia, J., & Cueto, S. (2017). *El apoyo de FORGE al desarrollo del Currículo Nacional de la Educación Básica del Perú. Informe final*. Lima: GRADE – Proyecto FORGE. http://repositorio.grade.org.pe/handle/GRADE/397. Accessed 22 Nov 2019.

The Economist, (2017). *Latin America's battle over "gender ideology"*. https://www.economist.com/the-americas/2017/09/30/latin-americas-battle-over-gender-ideology. Accessed 26 Aug 2019.

Vargas, J.C. & Cuenca, R. (2018). Perú: el estado de políticas públicas docentes. Instituto de Estudios Peruanos. http://repositorio.minedu.gob.pe/handle/MINEDU/5868. Accessed 22 Nov 2019.

Vílchez, K. M. R., & Hurtado, N. S. (2018). El derecho a la educación intercultural bilingüe de la niñez indígena en el Perú: avances y desafíos. *Persona y Familia, 1*(7), 135–163. https://doi.org/10.33539/peryfa.2018.n7.1255.

What is the Diploma Programme. https://www.ibo.org/programmes/diploma-programme/what-is-the-dp/. Accessed 26 Aug 2019.

World Bank. (2017). *World Development Report 2018. Learning to realize education's promise.* The World Bank. https://openknowledge.worldbank.org/handle/10986/28340. Accessed 22 Nov 2019.

Yamada, G., Lavado, P., & Oviedo, N. (2016). La evidencia de rendimientos de la educación superior a partir de "Ponte en Carrera" *Documento de Discusión CIUP* No. 16-08.

Chapter 7
Reforming Education in Poland

Jerzy Wiśniewski and Marta Zahorska

Abstract This chapter presents a history of the successes and challenges of education reforms in Poland from 1999 to the present in the context of political and social changes.

The goals of 1999 school system reform were to enhance the quality and effectiveness of the education system, ensure equal opportunities and raise the number of graduates of secondary and tertiary programs. The reform encompassed modernisation of core curriculum and the introduction of external exams. The crucial aspect of the reform was the reduction of primary education from 8 to 6 grades and creation of a new 3-year general lower secondary school level, what extended comprehensive general education by 1 year and postponed tracking to general and vocational secondary schools. The reform efforts were continued with the further changes in the curriculum aimed at the development of cognitive and analytical abilities and problem-solving skills. The positive outcomes of the reforms were seen in the progress of Polish students in consecutive (2000–2018) cycles of the PISA study. However, despite strong student performance, the new lower secondary schools developed a poor public reputation. In the 2015 election campaign, the then opposition party appealed to a general nostalgia for the "good old times" and, among other populist proposals, promised to reverse the education reform by eliminating lower secondary schools. When the party won the election, they quickly reversed the earlier reforms, disregarding negative opinions of researchers and local authorities as well as the protests of parents and teachers. Teachers' frustration because of the chaos caused by the reform, poor working conditions and low salaries culminated in the 2019 strike in which almost 80% of schools participated. The protest, although not successful, was a beginning of civic society informal activities like citizens debates on education (NOoE).

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7.1 Introduction

In this chapter we will present a history of the successes and challenges of education reforms in Poland from 1999 to the present in the context of political and social changes.

The 1999 school system reform was introduced 10 years after comprehensive political and economic changes in Poland began which instigated changes across Central and Eastern Europe and led to the collapse of the Soviet system. The objectives of the reform were to enhance the quality and effectiveness of the education system, ensure equal educational opportunity for all students, and raise educational attainment by increasing the number of graduates of upper secondary and tertiary education programs. To achieve these objectives, the Ministry of Education introduced a redesigned national core curriculum which set only general learning objectives for each level of schooling, while decisions on pedagogic methods, didactic tools, and the selection of textbooks were left to teachers and schools. Curriculum reform was accompanied by the introduction of external exams at the end of each cycle of schooling (primary, lower and upper secondary). The most critical and visible aspect of the reform was the reduction of primary education from 8 to 6 grades and creation of a new 3-year general lower secondary school level. This structural change facilitated the implementation of the curriculum reform because it extended comprehensive general education by 1 year. The opening of new lower secondary schools with new curriculum and greater school-level autonomy was seen by teachers as an opportunity to promote innovative approaches to teaching and learning and to experiment with new teaching methods. Enhancing teacher autonomy demonstrated trust in teachers' skills and competencies, which was crucial for their ability to cope with reform implementation, as well as the overall success of the reform. The positive outcomes of the reform were seen in the progress of Polish students in consecutive (2000–2018) cycles of the PISA (Program for International Student Assessment) study. Particularly important was the reduction in the proportion of low performing students in PISA 2003 in comparison to PISA 2000. Those students benefited from the additional year of general education and better quality schools in rural areas.

However, despite strong student performance, the new lower secondary schools developed a poor public reputation. This was primarily attributed to the short timeline of the reform implementation, with less than 2 years between the presentation of the reform concept and the opening of new schools and introduction of new curriculum. Moreover, teachers in the new lower secondary schools encountered behavioral problems typical of young teenagers. Even though teachers subsequently developed methods to address these behavioral problems and work effectively with teenage students, these negative experiences remained in the collective memory.

Year by year the reform brought positive results what was confirmed by the results of Polish students in PISA study in 2006 and 2009. Poland became a 'top performing country' due to mean results beyond the OECD average and the reduction of the between school variance. However there were shortcomings. Students

had difficulties with nonstandard problem solving tasks, the competences of the students in different types of upper secondary schools vary significantly and the participation in the preschool programs was relatively low.

To address those challenges the Ministry of Education initiated in 2008 the curriculum reform aimed at the development of cognitive and analytical abilities, nonstandard problem-solving skills, and raising the competences vocational school goers. At the same time school education was made mandatory for 6-year-olds and pre-school for 5-year-olds. While the change seemed justified as mean to ease access to pre-school programs, for many it was difficult to accept as it was generally believed schools were not ready to receive younger children. A grassroots social protest movement was organized very efficiently under the banner of "Save the Toddlers".

In the 2015 election campaign, the then opposition party appealed to a general nostalgia for the "good old times" and capitalized on the negative opinions of the 1999 school reform and the change of the school starting age. They promised, among other populist proposals, to reverse the education reform by bringing back the old structure of the education system. This included eliminating lower secondary schools and raising the school starting age to seven. When the party won the election, they quickly pushed new regulations through Parliament and reversed the reforms, disregarding the protests of teachers, parents, local authorities and researchers. The new "Law on Education" demolished the school system by introducing change without proper infrastructure. Curricula, textbooks, and manuals were written in haste, and the new curriculum no longer integrated the learning of several subject fields at a time. History and Polish language syllabi were extended in order to more effectively shape the national identity of students.

That reform (of 2017) was not rooted in evidence-based research and policy, but was a reaction to collective public opinion that schools were not working properly. Teachers universally perceived this as a negative evaluation of their work and the many years they had dedicated to improving the quality of education. The subsequent disbanding of teacher teams at lower secondary schools discounted their valuable achievements and severed local social capital.

The lessons from the history of recent education reforms in Poland are:

- Curriculum reform should be facilitated by the creation of pro-reform, innovative learning environment which place trust in teachers' skills and competences.
- Even successful reforms are not sustainable if they are not understood and supported by the larger society, particularly parents. Without public support, politicians (populists) are ready and able to appeal to popular nostalgia for "good old times", ignore evidence, and reverse earlier reforms. Such changes are difficult, if not impossible, to reverse.

7.2 The 1999 Education Reform

7.2.1 Social & Political Context of the 1999 Education Reform

It would be impossible to describe any societal or political changes in Poland over the last 30 years without discussing the historic breakthrough of 1989. That year the so-called "Round Table" talks were convened with representatives of the "Solidarity" trade union, previously banned under the 1982 Marshal Law, and the ruling communist party. After many weeks of negotiations, civil liberties were restored, including the freedom of association in trade unions and the abolition of censorship. However, the single most important achievement was the agreement to hold free elections for the upper chamber of Parliament (the Senate) and free elections for 35% of seats in the lower house (the Sejm). The elections were held on June 4, 1989 and every possible seat was won by candidates of the Citizens' Committee, with Lech Wałęsa, leader of the 1980 strikes, the first leader of Solidarity. With this election, Poland became the first country of the so-called Soviet bloc where representatives of the democratic opposition gained real influence and power. In September 1989, a non-communist government was formed, marking the symbolic and actual end of the communist regime in Poland and – over the next few months – in the entire Eastern Europe.

The new government began to vigorously introduce reforms – both political (democratization, rule of law, civic freedoms) and economic (competition, free market, limiting the role of the state). The reforms brought about positive results – halting the enormous inflation, reviving individual entrepreneurship, and engaging citizens in various social activities. However, rapid transformations also led to serious repercussions in the form of social divides. Many companies went bankrupt. Unemployment rose. One could observe both the swift financial success of the few, and a sharp decline in living standards for many social groups. Public sector employees, including teachers, also experienced painful wage cuts. The political scene was unstable, governments came and went in close succession, and consequently various reforms were undertaken only to be abandoned soon after. The systemic changes concerned education only to a very small degree.

Limiting the state monopoly supervision after 1989 also resulted in changes in the provision of social services, including education. New, usually private, institutions were founded to satisfy educational, health and other needs. Non-public schools and universities were opened. The private tertiary education sector proved particularly vibrant as an alternative to state universities, whose organization, financing and management methods no longer lived up to social expectations.

In the early nineties modifications of school curricula were introduced, especially in the field of history, which was purged of elements of communist ideology. At the same time, schools were encouraged to allow parents and students to weigh in on school life. The teaching methods, however, remained unchanged. The lecturing method was used in class, pupils were rarely encouraged to independently solve problems or take part in discussions. In the second half of the nineties the Ministry

of Education launched discussions on the reforms of school curricula and established quality assurance mechanisms in education, including the introduction of external examinations. The efforts were supported by increasingly strong contacts with developed western countries and cooperation with the World Bank, OECD and the European Union (EU), the latter of which dedicated special aid funds in preparation for Poland's anticipated membership. These connections enriched the discussion of the development of the Polish education system, especially by the comparison of living standards and the quality of public services in various countries. It is hard to overestimate the role of international comparative research on student achievement[1] developed since the 1960s by the International Association for the Evaluation of Student Achievement (IEA) and later by OECD (especially PISA). However, in the 1990s Poland did not yet participate in these types of international assessments, so it was therefore difficult to verify or contradict the widely held belief that the Polish education system was performing adequately.

7.3 Changes in the School System in the Wake of the Education Reform (1999)

The profound systemic changes initiated in Poland in 1989 barely affected the public education system. It was not until 10 years later that the system underwent a fundamental reform. The 1999 Education Reform was one of a number of public sector reforms based on the new ruling party's guiding principles of free market solutions and decentralization. In January 1998, 3 months after the formation of government, the Minister of Education publicly announced the plan for a comprehensive reform of the education system. The need for change was justified first and foremost by overall low educational attainment levels and significant inequalities in access to education which limited economic and social development. The Ministry of Education identified the following 3 major goals of the reform:

- Raise the educational attainment of society by increasing the number of graduates of upper secondary and tertiary education programs
- Ensure equal educational opportunities through the development of a well-staffed and well-equipped network of schools, particularly in rural regions; financial assistance for students and improved provisions for students with special needs
- Enhance the quality of education by modernizing the structure and content of the national curriculum in order to prepare students for lifelong learning and active participation in economic and social life

[1] Spring J (2009) Globalization of education. An Introduction, Routledge, New York and London

A key element of the reform was a change in the structure of the education system achieved through the introduction of a new school level – a 3 year lower secondary school. Lower secondary school provided general curriculum in addition to 6 years of primary school and served as an introduction to either academically- or vocationally-oriented upper secondary school. The education system reform was implemented swiftly to coincide with other simultaneous public sector reforms, including of the pension system, health care and public administration. In May 1998 a draft of the comprehensive education reform[2] was presented and in July the Sejm (Lower House of Parliament) amended the law. In January 1999 the law "Regulations for the School System Reform"[3] was passed, and in February an executive order was issued with the new national curriculum along with guidelines for its implementation. Meanwhile, the first classes of the newly created lower secondary schools were scheduled to begin in September 1999. The scarcity of time between the announcement of the reform, the legislative process, and implementation did not allow for proper consultations. Despite the Minister of Education and ministerial officials' assurances that they were open to critical remarks, a true debate with such limited time was impossible.

7.3.1 Changes in the School Structure

The introduction of a new school level was the reform's most spectacular change. The 8-year elementary level was reduced from 8 to 6 years and a 3-year lower secondary school (*gimnazjum*) was formed. This extended mandatory general education by 1 year, with obligatory education starting at the age of seven and ending at the age of 16. For their subsequent years of education[4], students had the choice of attending a 3-year upper secondary school (*liceum*), a 4-year technical school, or a 2–3-year vocational school. The principle which required some form of institutional education until the age of 18 remained unchanged[5].

The newly established lower secondary schools were intended to contribute to the implementation of the substantial national curriculum reform and raise the quality of education particularly in rural areas. The new schools were to have larger catchment areas than the previously existing primary schools. They would be

[2] Ministry of National Education (1998) "Reforma Systemu Edukacji – projekt". WSiP, Warszawa

[3] *Przepisy wprowadzające reformę ustroju szkolnego.*

[4] The Government that initiated the reform intended a different form of education at the secondary level, through the institution of profiled schools based on the comprehensive school model. But because they lost the elections after a merely 4-year term, they could not continue further changes in education. Their successors maintained the division on into three types of secondary schools, traditional in Poland.

[5] Due to a strict observation of this obligation, very few students drop out of the education system before the age of 18.

sufficiently large to make it economically viable to hire teachers-experts in particular subject fields (such as physics, chemistry, and biology) and finance the necessary equipment for workshops and labs. The introduction of computer classrooms in all lower secondary school was also a priority.

7.3.2 Curriculum Reform

Changes in the organization of schools were meant to enable a more efficient introduction of the most important element of the reform – the new curriculum. Before 1989 the education system was based on one syllabus and one textbook per subject. During the 1990s individual schools were allowed to run original teaching programs on an experimental basis. Yet very few teachers embraced the opportunity as they were not prepared and did not feel competent.

The 1999 education reform introduced radical changes to school syllabi. The syllabi were derived from the national curriculum which determined the general education goals (including transversal skills – Box 7.1.), guidelines concerning the learning content, and the general rules for the functioning of schools. The key principle underpinning the new national curriculum was an emphasis on the

Box 7.1 Transversal Skills in 1999 General Curriculum
In school a pupil is provided with the conditions to acquire knowledge, skills and habits, i.e. to develop competences as follows:

Learning

- Acquiring know-how
- Problem-solving
- Organizing the learning process and taking responsibility for one's education
- Using experience and combining various elements of knowledge

Thinking

- Understanding the relations between the past and the future, cause and effect, functional dependencies
- Holistic and contextual perception of complex phenomena

Enquiry

- Searching, organising and using information from various sources, including reasonable and competent use of information technology and media

Acting

- Organising the work of oneself and others

(continued)

Box 7.1 (continued)

– Preparing activities and assuming responsibility for their running and results
– Rational time management

Self-improvement

– Evaluation of one's attitude and conduct, and that of others, according to accepted standards and universal values
– Taking responsibility for oneself and others
– Flexible response to change, seeking new solutions, standing up in the face of adversity
– Maintaining physical and mental fitness

Communication

– Effective communication
– Presentation of one's point of view, putting forth arguments and defending one's opinion
– Readiness to listen and take other peoples' opinions into consideration. Conflict resolution
– Making use of new communications technologies

Cooperation

– Group work; negotiating and reaching agreement, making group decisions, applying democratic procedures
– Establishing and nurturing contacts, building interpersonal relations

responsibility of the school for the implementation of the educational mission and goals. The guidelines for specific subjects were formulated in three points:

– Education goals – competences and attitudes which should be developed
– The tasks of the school – how the learning and teaching process should be carried out
– Content – the content of school syllabi

The guidelines of the national curriculum established standard requirements to be achieved by students at each stage of their education. They were also the basis for the proliferation of school syllabi and textbooks. It became possible to create many syllabi for every subject and to introduce different manuals. The choice of the syllabus and textbook was given to the teacher. This was a fundamental change for teachers, in that moving away from one centrally-defined syllabus increased their autonomy, but also their responsibility for the successful implementation of the curriculum. In practice, balancing the teaching of knowledge and skills proved to be a

challenge for teachers. Teachers complained that the syllabi were overloaded with content knowledge and there was not sufficient time to practice skills[6].

7.3.3 Promotion and Training for the Reform

The Ministry of Education made a considerable effort to disseminate information about the reform to all interested parties at the local level, especially teachers and parents. The Ministry continually emphasized the key role of teachers, not only in the short-term implementation of the reform, but also in the long-term process of the continuous development of the education system. The Minister of Education expressed this in his introduction to a publication presenting the future reform[7]:

> *The reform of the education system is never a fully completed task, but rather a framework for an inspiring process. We do not wish to destroy what is good. We wish to help those who are striving for improvement. Hence it must be clearly underlined, that it is the awareness of the achievements of individual teachers, headmasters, but also local authorities, (…) that gives us the mandate, but also the obligation to proceed with this swift and comprehensive reform.*

To reach the teachers, the Ministry set up a cascade training program under the heading of "New School" ("*Nowa Szkoła*"). During the first stage of the program 2750 trainers were trained to provide professional development programs for teachers[8]. The trainers organized meetings with teachers' councils[9] to discuss changes in the curriculum. They covered topics which included increased autonomy and responsibility of schools for the creation of teaching syllabi, interdisciplinary (cross-subject) integration, the establishment of school assessment systems, and preparation for external examinations. The Ministry estimated that approximately 70% of teachers participated in the training program[10]. At the same time, information meetings were organized by regional teacher development centers. From April to June 1999, over 200,000 teachers participated in 6363 such conferences[11]. The Ministry of Education in consultation with academic authorities defined the requirements for teachers professional development courses and made a special fund available in the form of grants to universities on a competitive basis. In the effect of three cycles of the grant program 15,000 teachers completed post-graduate courses and some 80,000 teachers participated in shorter in-service training courses[12].

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[6] Konarzewski K, Reforma oświaty. Podstawa programowa i warunki kształcenia (2004). ISP, Warszawa.

[7] Ministry of National Education (1998) "Reforma Systemu Edukacji – projekt". WSiP, Warszawa

[8] Ministry of National Education (2001) "Edukacja, Raport 1997–2001". Wydawnictwo CODN, Warszawa

[9] Teachers' council is a main decision-making body in a school. It decides on teaching programs, professional development, students marks and graduation etc.

[10] ibidem

[11] At the time, schools employed about 0.5 million teachers. Ibidem.

[12] Ibidem

An important element of the Ministry's information campaign was the so-called "Reform Library" ("*Biblioteczka reformy*"). It included 40 booklets (A5 textbook format, a few dozen pages each) that presented the essential issues concerning the reform in a clear and simple manner. They covered teaching syllabi, the school network organization, financing, manuals, assessments and examinations, teachers' work, and supervision. The circulation of each booklet was 75,000 copies and they were sent free of charge to schools, libraries and teacher training centers. Despite the efforts, fears were not entirely dispelled nor were people fully reassured. Surveys among teachers showed that they were immensely concerned by the planned changes; they felt especially insecure due to the change in the terms of employment. Over 50% of the respondents in a national sample of teachers in 1999 believed that the reform should be put on hold[13].

7.3.4 Textbooks

The school textbooks market de-monopolization policy was introduced at an early stage during the 1989 overall economy transformations. Hence, when the 1999 education reform was introduced, several professional, competing publishers already existed, although the state company (WSiP), the only provider of textbooks before 1989, still held a dominant position. The reform, and specifically the possibility of choosing a syllabus and textbooks by schools, created unique opportunities for publishing houses to develop and improve their market position.

In the brief period between the announcement and the implementation of the reform, the publishers made an enormous effort to equip teachers with new textbooks for the classes that initiated the reform, especially the first year of the lower secondary school, at the start of the 1999–2000 school year. Before being cleared for use in schools, all textbooks had to be evaluated by experts designated by the Ministry of Education. One-hundred seventy-nine titles were on the list of accepted new textbooks announced before the beginning of school year 1999–2000. The list did not include exercise books or teachers' manuals. It was estimated[14], that in total over 500 titles issued by 150 publishers were available.

The majority of new textbooks proposed innovative solutions in terms of both method and form. This encouraged teachers to verify their own pedagogic and didactic methods and to seek new solutions. They received support, as the appearance of new textbooks on the market was accompanied by manuals with

[13] Putkiewicz E, Siellawa-Kolbowska K, Wiłkomirska A, Zahorska M, (1999) Nauczyciele wobec reformy edukacji. ISP, Warszawa, p. 142.

[14] Gołębiewski Ł, (2000) "Raport o książce szkolnej", Biblioteka Analiz, Warszawa

methodology, lesson plans and teaching aids that could be copied, handed out to students, and used in class. However, publishers found it challenging to reach teachers with information on their offerings for school syllabi and textbooks. As a result, publishing houses organized and participated in various didactic conferences, supplementing the reform campaign of the Ministry of Education and contributing to the development of the teachers' know-how.

7.3.5 Assessment

The introduction of external, standardized examinations at the end of every stage of education was a change of great significance and with great consequences. Exams at the primary and lower secondary school level became mandatory, as opposed to the final secondary school exam (*Baccalaureate* or *Matura*). However, since the latter replaced the university entrance exam, all students who aspired to continue their education at a higher level nevertheless took the exam. The reformers intended the system of tests and examinations to[15]:

– Assess students' acquired skills and knowledge defined in the national curriculum;
– Allow for comparisons in the performance of schools and individual students;
– Indicate the consistency and quality of learning.

Tests and examinations were to be above all tools for reflection and self-assessment for schools. They were to assist the process of drawing conclusions concerning the performance and quality of schools. The intention was to use test results for external evaluation (supervision) only to a limited degree, and the conditions of a given school were to be taken into consideration. Nevertheless, quite quickly, due to the ranking lists published in the press, the tests became the basis for a public (informal) evaluation of school performance, the comparison of schools, and even the assessment of particular teachers. Another reason for this was the results of the post-lower secondary exam (along with the scores on the school-leaving certificate) were crucial for recruitment to secondary schools. A good result meant admission to a renowned upper secondary school, which in turn increased the chances of a good result on the baccalaureate exam and the opportunity to enroll free of charge at one of the best state universities. In large cities, selective recruitment for lower secondary schools emerged, despite the existence of school catchment areas guaranteed by law. For instance, schools introduced classes with an extended foreign language program, and during the recruitment process students were tested for linguistic abilities, though the results of their post-primary exam were also considered. Gradually, preparing students for examinations became one of the most important tasks of every teacher. Consequently, students frequently practiced taking exams and "learning for tests".

[15] Ministry of National Education (2001) Edukacja, Raport 1997–2001. Wydawnictwo CODN, Warszawa

7.3.6 Management, Financing, & Quality Assurance

The education reform was implemented alongside the administrative reform, which introduced a three-tier structure of local administration with delegated responsibility for running schools at different levels. Primary and lower secondary schools were run at the municipal level, upper secondary at the county level, and higher vocational schools at the provincial level (*voivodeships*)[16]. The local authorities received funds for the financing of education from the state budget in the form of a subsidy. Its amount was calculated based on the number of students. However, the funds were not ear-marked in the local budget and thus could be dedicated to any goal. In practice, the subsidy usually only covered teachers' wages. The local authorities had to cover the remaining costs from their own resources.

One of the most important initial tasks of the new authorities was to configure a school network in their catchment area. The municipalities needed to establish lower secondary schools and make decisions concerning the further functioning of significantly smaller (6, instead of 8-year) primary schools. The county authorities took over upper secondary schools, including vocational schools, which catered to the needs of former industrial enterprises and not current economic needs. Because education financing was dependent on the number of students, the funds allocated to small rural schools were insufficient. Many of them were closed, and pupils had to be transported to larger establishments.

The reform of the education system, aligned with the public administration reform, also handled the issues of supervision. The task of controlling the legal and educational aspects of school activities was entrusted to Education Boards (*Kuratoria Oświaty*) placed within the structure of the provincial *(voivodeship)* government administration. School performance was periodically assessed via self-assessment (including opinion surveys among parents and students), expert on-site visits, and external examinations. Overall, three bodies had an impact on the functioning of schools: local authorities (material teaching conditions), Education Boards (supervising regulatory aspects, especially the adherence to the national curriculum), and school principals (coordination of the learning process). This setup occasionally caused tensions, especially in organizational matters with financial consequences (e.g., class sizes, extracurriculars, etc.).

The organizational changes also required the appointment of new principals and the exchange of principals among existing schools. Principals were selected through competitions, which gave them great confidence and higher status in local communities. New principals, especially those of lower secondary schools, tried to promote a school culture based on quality and cooperation. The increased autonomy of schools and teachers in making decisions concerning school syllabi rendered the task easier. According to the recommendations, schools were to be open to

[16] Universities gained autonomy already in the early 90-ties.

cooperation with local communities, especially with parents. Every school was to have a statute, mission statement, educational program, scoring rules, and other principles guiding school life. The objective of the recommendations was to create teams of teachers who would work together to fulfil common goals. In many schools the recommendations were deemed to be nothing more than cumbersome red tape. However, certain schools bloomed thanks to the implementation of the guidelines. (See Box 7.2).

Box 7.2 Case Study of Successful Reform Implementation

- Research work conducted in 20 selected lower secondary schools in 2006 by a group of sociologists from the Warsaw University enabled the identification of a school where the reformers' recommendations to create a friendly school culture based on partnership were fully achieved.
- The school principal was a very active and resourceful man. He had travelled a lot and was familiar with the school systems of many countries. When the decision was made to introduce lower secondary schools in the spring of 1999 he started to recruit teachers. For 3 months prior to the start of the school year, they discussed the basic strategy for the operation of the school. The school year opening was a big event, attended by teachers, parents, local officials, and entrepreneurs. After the event, finding sponsors willing to support the school was never a problem.
- The school had its own internal rules and regulations (agreed with the Parents' Council), which were observed to the letter. The students' rights were respected. The class leaders formed a consultative body that the principal met with once a week. Students were motivated to learn and develop their competences in a culture of high expectations. No serious cases of negative student behavior were noted. Absenteeism – a problem in most Polish schools – was almost non-existent, nor was grade repetition. Although the area, like other rural communes, was affected by high unemployment, low parental educational attainment, and low average income levels, student test results were significantly higher than the average in the region.

In Poland many schools attempt to develop practical and social skills by ensuring a well-organized system for involved, innovative and cooperating teachers. Yet in the majority of schools, teachers hold traditional lessons focusing mainly on transferring knowledge they perceive to be is indispensable for achieving good results in exams. This, in turn, reflects directly on the public opinion of the teacher and the rating of the school.

Table 7.1 Teachers' perception of education reform (%) (2000)

Change introduced with the reform	Percentage of positive responses	
	Primary school teachers	Lower secondary school teachers
Creation of lower secondary schools	41	72
Possibility to choose textbooks and school syllabi	90	90
Introduction of internal assessment systems	80	86

7.3.7 Teachers

For many teachers the reform meant a change, but for some it resulted in job loss. This was due to the reduction of years in primary school from 8 to 6, the closing of small, rural schools, and higher requirements for lower secondary school teachers (university degree). Additionally, new principles of promotion were introduced. Higher levels could be achieved after required job tenure and through participation in professional development courses. A promotion to the next level meant a higher salary.

Surveys of teachers demonstrated their anxiety during both the planning and implementation of the reform. There was a particularly high sense of insecurity linked with a change in the terms of employment. In 1999 over 50% of respondents from a national sample of teachers indicated the reform should be stopped[17]. The attitude of teachers towards specific solutions within the framework of the reform was studied at the request of the Ministry of Education at the end of 2000[18]. The study also included students, parents, and representatives of local school authorities. From a broad set of issues, we selected a few below that seemed especially important (Table 7.1).

Teachers[19] of both types of schools gave a very positive response to the possibility of choosing textbooks and teaching syllabi (90% positive responses). The new internal assessment system, in which the teachers as a team determined the rules, criteria and grading scale, was also very well received (80% and 86%). Teachers of primary schools assessed the introduction of lower secondary schools much worse (only 41% positive) than their colleagues who worked in the new lower secondary schools (72% positive). The survey also inquired about the school syllabi used by the teachers. The overwhelming majority (98% in primary schools and 95% in lower secondary) used syllabi developed by experts and approved by the Ministry

[17] Putkiewicz E, Siellawa-Kolbowska K, Wiłkomirska A, Zahorska M, (1999) Nauczyciele wobec reformy edukacji. ISP, Warszawa, p. 142.

[18] Ministry of National Education (2001) "Edukacja, Raport 1997–2001". Wydawnictwo CODN, Warszawa

[19] The representative sample included 765 primary schools and their 7091 teachers; 241 lower secondary schools and 2604 teachers respectively.

Table 7.2 Teachers' opinions on the effects of the reform (%) (2003)

	Primary schools		Lower secondary schools	
	Rural	Urban	Rural	Urban
All changes for the better	2	0	3	1
More changes for the better than worse	29	35	44	32
More changes for the worse than better	44	40	27	39
All changes for the worse	10	10	10	12
No impact	6	7	6	4
No opinion	9	8	10	12

of Education. One in four teachers partially modified the syllabus to adopt it to their students' needs. Only the most creative teachers (2–3%) devised their own teaching syllabi.

Four years after the launch of the reform, Professor Konarzewski[20] interviewed a representative sample of 950 teachers from primary and lower secondary schools. Their opinions on the effects of the reform are summarised in the table below (Table 7.2).

Teachers of rural lower secondary schools were the only group that reported more positive than negative impacts of the reform. At the same time, teachers of rural primary schools were the most skeptical group. The difference in opinion could be due to the fact that lower secondary schools were new, better equipped, and often located in modernized buildings with qualified teachers who were willing to innovate. On the other hand, primary schools in villages were in declining physical condition, while the number of students, classes, and teachers dwindled. Small schools were in serious danger of being closed.

7.4 Reform Implementation and its Consequences

The reform implementation started with the admission of all graduates of the sixth grade of primary school to the first grade of the newly established lower secondary schools. Initially the curriculum reform concerned only students of 1 year. Since securing the necessary school infrastructure in such a short time was not possible, the local authorities were compelled to choose certain primary schools and transform them into lower secondary schools. Opening a lower secondary school meant that the pupils of the former primary school had to be moved to other establishments. As this was not always possible, schools were sometimes left unchanged, except the seventh grade was renamed as the first grade of the lower secondary.

[20] Konarzewski, K. *Reforma* oświaty, ISP 2004

There were a number of challenges during the early stages of reform implementation. Due to the speed of the reform, teachers found it difficult to familiarize themselves with the new syllabi and textbooks, and hence frequently chose materials at random. Not every syllabus was well adapted to student needs. Occasionally for instance, an element necessary for teaching physics was missing from the maths syllabus. There were also delays in printing and delivering some textbooks to schools. These logistical problems contributed to the negative perception of the reform in public opinion. However, the biggest problem about lower secondary schools in the public's opinion was of a behavioral nature. Conflicts emerged between students and teachers that had never occurred before in primary schools. This was the combined effect of gathering youngsters of a so-called "difficult age" in one type of school and having teachers who were not properly prepared. Nor were the psychological counselling centers – the very institutions meant to support schools in such cases.

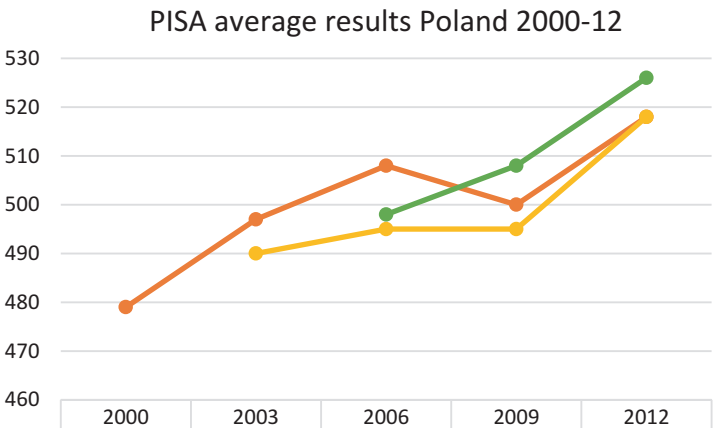
In time, most of the implementation challenges were resolved. New buildings were constructed for the lower secondary schools and the issues with syllabi and textbooks were sorted out. Teachers gained the experience and ability to work with teenagers and to deal with problems typical for adolescence. Yet the perception of lower secondary schools as places where young people often became demoralized by violence, alcohol, drugs, and sex still remained.

Despite the difficulties, many principals and teachers, especially in newly formed schools, saw the reform as a chance to abandon obsolete school routines and introduce innovative teaching methods to engage young people, develop cooperation with local communities, and gradually expand the application of computer technologies. The introduction of new syllabi to schools was assisted by publishers of various kinds of educational books. They offered training courses to promote their textbooks, programs, methods, and didactic materials. Their efforts, supported by education authorities, brought about positive results, though not immediately.

Evaluating a reform's effect is always challenging. Poland was lucky to participate in the first PISA study to evaluate the reform of 1999. The study was carried out for the first time in 2000. At that time 15-year-old students (the age group targeted by PISA) were not affected by the reform. The second cycle of PISA in 2003 assessed the students who were in the last year of new lower secondary schools. This meant the group targeted by PISA 2000 could serve as a benchmark for the evaluation of the reform by comparison with the results in consecutive cycles of the study.

The improvement in PISA scores between 2000 and 2003 served as a very positive evaluation of the reform (*See* Chart 7.1). Poland improved its scores significantly in all domains. Moreover, the analysis[21] of the distribution of students' results

[21] Jakubowski, M., Patrinos, H., Porta, E, & Wiśniewski, J. (2016), *The effects of delaying tracking in secondary school: evidence from the 1999 education reform in Poland*. Education Economics 1–16. doi: https://doi.org/10.1080/09645292.2016.1149548



	2000	2003	2006	2009	2012
Reading	479	497	508	500	518
Mathematics		490	495	495	518
Science			498	508	526

Chart 7.1 PISA average results – Poland (Each of the PISA study domains is a main domain in every third cycle of the study. Trends can be calculated for reading from 2000, math from 2003 and science from 2006. http://pisadataexplorer.oecd.org/ide/idepisa/)

revealed that the increase in average results between 2000 and 2003 was mostly due to the reduced number of low achievers. Moreover, the most significant improvements were made by students who would have previously ended up in basic vocational schools. After the reform, because tracking was postponed, they were given a chance to acquire more general skills in the newly created lower secondary schools.

The introduction of exams after every stage of education made it easier to make decisions concerning further education. Either everyone took the exams (end of lower secondary), or nearly everyone (baccalaureate), which automatically enabled students to apply to schools of a higher level. There was a selection process, but overall the paths to subsequent stages of learning were more accessible. The outcome was a real educational boom. The number of secondary school and university graduates grew rapidly. On the other hand, vocational schools, which had enjoyed the most popularity during the communist times and had been attended by almost 50% of primary school leavers for half a century, collapsed due to a lack of candidates.

However after a few years, even the successful implementation of the reform's main aims gave rise to accusations against its authors. People complained about the poor preparation of students and a devaluation of diplomas. The critics disregarded the fact that this was due to a significantly greater influx of candidates to secondary schools and tertiary education institutions. The students were more diversified in their competences and abilities. Besides, some were less interested in broadening their knowledge and skills than in extending the status of a student (benefits

especially health insurance covered by the state) and postponing entering the labour market characterize by the high unemployment.

The role of lower secondary schools in providing equal opportunities, one of the main objectives of the reform, was also questioned. In big cities lower secondary schools differed in quality because of the emerging mechanisms of selective recruitment (despite the school catchment principle guaranteed by law). For instance, schools opened classes with an extended foreign language course, and during recruitment tested prospective students' abilities. This brought about serious consequences. Parents, especially middle-class parents, tried to enroll their children in schools with a better reputation. This should not have taken place, yet a blind eye was turned to exceptions, because school principals were keen on admitting good students. Great hopes were placed in rural lower secondary schools, which were to raise the education levels of children in the countryside, but there also was some degree of disappointment. In many towns the schools were well equipped, but only local pupils could fully enjoy the opportunities. The buses transporting children from remote villages were departing from the schools once regular lessons ended. In the effect those children were unable to participate in many of the extracurricular activities or benefit from the additional assistance of teachers in the learning process. A scrutiny of exam tests results still showed a strong link between students' achievements and the level of their parents' education and place of residence.[22]

There were parliamentary elections in Poland in 2001 and education was among important topics addressed by various parties in the electoral campaign. Opposition parties criticised the reform of 1999 and suggested that some "corrections" were needed. In particular they proposed not to convert technical secondary into profiled general secondary schools and vocational continues training centers. Another proposed option was to postpone the introduction of external final secondary school exam. The opposition won the election and quickly introduce both proposed changes. The message from that move was threefold. Firstly it said that the reform was not perfect. Secondly, it was possible to change (at least partly) the reform. And thirdly, the modification of the curricula for upper secondary education was slowed down.

That was the first signal that the sustainability and continuity of education reforms could be affected by political changes.

[22] Dolata R, (2008) Szkoła – segregacje – nierówności. Uniwersytet Warszawski, Warszawa.

7.5 Reform Follow-Up

7.5.1 Modernization of Teaching Curricula

The 2003 and 2006 PISA studies showed that Polish students performed well in reading and comprehension and ranked among the best in international comparisons (*see* Chart 7.1). Yet they continued to struggle in a few areas, including with math problems which require moving away from simple schematic solutions, reasoning in natural sciences, and general problem solving. The national report on the 2006 PISA results indicated that: "The development of abilities of independent thinking, scientific reasoning, mathematical modelling and reasoning, formulating hypotheses, writing concise conclusions, perceiving alternative solutions to problems, is the Achilles heel of the Polish system of education."[23]

At the same time, PISA and other studies were used to analyse how far the selection of the general education (academic) and vocational path impacted the students' achievements. In the first PISA study (2000) the differentiation in results was strongly linked to the type of school – the results of vocational school students were very weak, while students in general education upper secondary schools performed well above the international average. In the PISA 2003 study that only covered lower secondary school students, the differences, especially between schools, were much smaller. A significant improvement in average results was due to better achievement of the weakest students. In order to evaluate the effect of selection, in the 2006 PISA an additional test was conducted in the first forms of upper secondary school. The results were just as differentiated and strongly linked with the type of school, as was the case in PISA 2000.

These results led to the preparation of yet another change of school curricula in 2008. The reform introduced in 2008 aimed at the development of cognitive and analytical abilities, non-standard problem-solving skills, and raising the competences of vocational school goers (e.g., basic literacy). The new general education curriculum[24] created two 6-year cycles: the first for primary school and the second lower and upper secondary schools. The general education curriculum covered in the first forms of all types of upper secondary schools would be basically the same – the same set of subjects and the same expected learning outcomes. The differentiation of curricula into academic-oriented or professional programs would start from the second grade. This was to mitigate the negative effects of selection to different types of schools.

[23] Ministry of National Education (2007) Wyniki badania 2006 w Polsce. MEN, Warszawa

[24] The new curriculum was introduced in December 1998 by the ordinance of the Ministry of National Education

Table 7.3 Learning Cycle Objectives

Primary	*General education in primary schools constitutes a foundation – the school carefully introduces students to the world of knowledge, providing for their balanced intellectual, ethical, emotional, social, and physical development.* *The objective of general education in primary school is:* *1) acquisition by students of a basic set of information on facts, rules, theories and practices mainly concerning topics and occurrences that are close to their experience;* *2) acquisition by students of **abilities** to use what they know when performing tasks and solving problems;* *3) forming those students' **attitudes** which are crucial for the efficient and responsible functioning in the contemporary world.*
Lower and upper secondary	*General education in lower and upper secondary schools, though provided in two different schools, forms, in terms of program, a coherent whole and constitutes the foundation for diverse professional qualifications, and their subsequent development or modification; it is a starting point for lifelong learning.* *The goals of general education in stages III and IV are:* *1) students' acquisition of a determined set of **information** on facts, rules, theories and practices;* *2) students' acquisition of **abilities** to make use of gained information during the performance of tasks and problem solving;* *3) shaping **attitudes** conducive to efficient and responsible functioning in the contemporary world*

Every learning cycle received a set of general objectives (*see* Table 7.3) that determined the role of a given cycle in the context of lifelong learning – a gradual introduction into the world of increasingly complex phenomena and the development of skills to enable understanding and using one's knowledge for further learning and development. The goal of education was to develop competences defined as a combination of knowledge, skills, and attitudes (as defined in the European Parliament Recommendation[25]).

The document specifies that the shaping of students' attitudes is to foster their further personal and social development. Thus the attitudes have been associated with values such as: honesty, credibility, responsibility, perseverance, self-esteem, respect for others, cognitive curiosity, creativity, entrepreneurship, politeness, and readiness to participate in culture, take initiative, and work in a group. The importance of civic involvement and respect for different traditions and the culture of one's nation were also emphasized. The schools were committed to prevent all forms of discrimination.

Each education cycle of the national curriculum was supplemented by the most important transversal competences (*See* Table 7.4).

[25] Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning, https://eur-lex.europa.eu/eli/reco/2006/962/oj

Table 7.4 Transversal Competences

Primary	Lower and upper secondary
1. Reading – defined as a simple activity, as well as the ability to understand, use and process texts to a degree that allows one to acquire knowledge, develop emotionally, intellectually and ethically and to participate in social life	1. Reading – the ability to understand, use and reflectively process texts, including cultural texts, leading to the achievement of one's goals, personal development and active participation in social life
2. Mathematical reasoning – ability to apply basic mathematical tools in everyday life and to conduct elementary mathematical reasoning	2. Mathematical reasoning – ability to apply basic mathematical tools in everyday life and to formulate judgements based on mathematical reasoning
3. Scientific thinking – the ability to draw conclusions based on empirical observations of nature and society	3. Scientific thinking – the ability to apply scientific knowledge to identify and solve problems, and to formulate conclusions based on empirical observations of nature and society
4. Communication skills in the native language and in a foreign language, both orally and in writing	4. Communications skills in the native language and in foreign languages, both orally and in writing
5. ICT skills including the search and use of information	5. Fluent ICT skills 6. Ability to seek, select and perform a critical analysis of information
6. Ability to learn as a way of satisfying the natural curiosity about the world, and to discover one's interests to prepare for further education	7. Ability to recognize one's own educational and learning needs
7. Ability to work collaboratively in teams	8. Ability to work collaboratively in teams

The knowledge, abilities, and attitudes that a student gained and developed in school were described in detail in terms of educational outcomes. This enabled the formulation of qualification requirements as the basis for examination tools. According to the new rule, every student was obliged to actively participate in at least one collaborative project during his or her time in lower secondary school, and the results would be presented to the entire school. Participation in the project was noted in the school leaving certificate, but not graded.

The introduction of curriculum changes and the preparation of new examinations were accompanied by large scale information campaigns addressed to students, parents, and teachers, who were also offered various training opportunities. Schools organized tests and examinations with tasks in line with the standards of the new curriculum.

As the national curriculum prioritized competences, schools felt encouraged to look for innovative solutions and to devise their own teaching syllabi without a strict division into school subjects, but rather around transversal issues and competence building. (See Box 7.3).

Box 7.3 Radowo Małe – An Exceptional School

Radowo Małe is a small town in a poor region of Poland with huge social problems.

The school is equipped in an unconventional manner. Classrooms and corridors are filled with cupboards, sideboards, mirrors, chests and plenty of bric-à-brac and pottery made by the children. Many classrooms have been transformed into workshops and labs for courses in drama, kitchen, travel, chemistry, pottery, and stained-glass.

> *School Principal: "Every workshop and its activities are meant to develop specific competences. In the drama room we teach listening, speaking, creative problem resolution, group work. In the travel room we teach how to seek knowledge from various sources, present information in different ways, to communicate and be understood; in the kitchen workshop we teach group work and taking responsibility, as well as how to learn and how to plan work. In the art lab we teach planning, taking a project to a conclusion…"*[26]

The school is following the national curriculum, yet adopting an out-of-the-box approach by combining topics from several subject areas in one project and working on it in mixed-age groups. Classes are organized in such a way as to give students enough time for various activities. Conducting 2–3 lessons at a time ensures that both students and teachers can work freely. Every child spends at least 6 h a week in the workshop format.

Changes to the national curriculum and external examinations introduced in 2008 likely contributed to the improvement of Polish students' performance on the 2012 PISA study (*see* Chart 7.1). This was noted in the national report on the study:

> *"The average score of Polish students in maths increased by as many as 23 points (…) A significant change also occurred in the field of comprehensive task resolution: Polish students solve problems which require reasoning, argumentation and strategy creation and application, better than (on average) students from OECD countries. In terms of scientific literacy, Polish students improved by 18 points."*[27]

7.5.2 Lowering School Starting Age

After the effective implementation of the 1999 systemic reform and the modernisation of national curriculum, the Ministry of Education began to introduce some additional changes to the education system. These changes in particular aimed to

[26] Quotes from Manthey E (2017) Nie-zwykła publiczna szkoła – reportaż z Juniorowa, https://www.juniorowo.pl/nie-zwykla-publiczna-szkola/ access 24.10.2018.

[27] Ministry of National Education (2013) PISA Wyniki Badania 2012 w Polsce. MEN, Warszawa

increase the participation of children in pre-school education. To this end, beginning in 2003, 6-year-old children were required to attend a nursery school or preparatory classes (so-called 'zero' classes) in primary schools. Next, in 2008, school education became mandatory for 6-year-olds and pre-school for 5-year-olds. These changes had two objectives. The first was to make an curriculum covering basic abilities such as reading, writing, and numeracy available to 6-year-olds. The second objective was to create more places in nursery schools for children aged 3–5 by moving older children into the formal school system.

While the change seemed justified, for many it was difficult to accept. First, it was generally believed that schools were not ready to receive younger children in terms of organization, programming, and equipment. In addition, children stayed in nursery school until the return of their parents from work, while in schools students were free to go home after just a few hours, what disorganized the lives of many families. After-school care was available, but it was not considered appropriate for small children. A grassroots social protest movement was organized very efficiently under the banner of "Save the Toddlers".

Under mounting pressure from the media and public, and supported by parliamentary opposition, the government delayed the implementation of the reform several times. However, this did not satisfy the protesters, who grew even stronger. At the end of 2014, a request for a referendum was submitted to Parliament, signed by nearly one million citizens. In addition to the question about the school starting age, it also asked about mandatory education for 5-year-olds, restoring the pre-1999 reform education structure, and curriculum changes. Parliament rejected the request on the grounds that the topics were too narrow and too specific for a national referendum.

7.5.3 Changes After 2015 – Reversal of Reforms

The abrogation of the law on the lowering of the school starting age became one of the slogans of the opposition in the parliamentary electoral campaign of 2015. This was accompanied by the promise to restore the pre-1999 school structure, leading to the elimination of lower secondary schools.

The opposition party won the parliamentary elections and immediately began to carry out its electoral pledge. The law was modified in a matter of weeks, and the school starting age of 7 was restored. At the same time, the mandatory 1 year preparation for school for 5-year-olds was abolished. The protests of local authorities, who invested in preparing schools for the reception of 6-year-olds and pointed out the difficulties of "returning" the youngsters to nursery schools, were completely ignored.

Plans to re-establish the old school structure, and thus eliminate lower secondary schools, triggered opposition from the most concerned parties: students, parents, and teachers. Researchers also protested, citing the PISA results as evidence of the strengths of the current system and the absence of any analyses showing a new system would be more effective. Local authorities also noted the need for financial

investments in school infrastructure. The Ministry disregarded the protests, but to assuage concerns, announced the launch of a national consultation process. They declared plans for any future changes would be derived from the conclusions and recommendations of the consultations. In practice, the consultation was a sham, limited to badly moderated internet discussions. No summary or conclusions were ever presented. The parents' and teachers' organizations responded with justified criticism (See Box 7.4).

With no report from the consultations, the Minister of Education nevertheless announced the intention to reinstate a school structure with an 8-year primary school, a 4-year general secondary school, 5-year technical secondary school and a 3-year vocational school. This meant the elimination of lower secondary schools. It is by no coincidence that the announcement was made during a conference outside of the capital and on the first day of the summer holidays in 2016. Teachers felt disappointed but did not have the opportunity to express their protest in an organized manner.

Box 7.4 Consultations of the reform proposals in the opinion of NGO-s[28]

"The government announced very broad consultations. We were pleased with the idea. We were anticipating a serious public debate" said Iga Kazimierczyk from the *"Przestrzeń dla edukacji"* ("Space for Education") Foundation. In fact – she added –these were no consultations, but meetings of experts in a closed circle of 1800 people divided into groups, and an exchange of opinions on a restricted platform. "We do not know, and will not find out any time soon, what opinions and what proposals were voiced there." she said. She pointed out that consultations happen, when a specific project is being consulted, and "in this case no one saw such a project". Sławomir Broniarz, the President of the Polish Teachers' Union added: "There was a declaration about the closing down of lower secondary schools, and we are waiting for the consultation process in this area. I am mentioning this, because it seems to me that the debate, the discussion initiated by the Minister is only to help come up with an idea. This means that, so far, you have dismantled a certain structure. It is easier than to build. The whole teachers' community is now waiting for what you intend to propose."

The "Law on Education" passed in December 2016 yet again demolished the school system by introducing change without a proper infrastructure, and with curricula, textbooks, and manuals written in haste. The curriculum changes involved dropping solutions that integrated the learning of several subject fields at a time. History and Polish language syllabi were extended in order to more effectively shape the national identity of students. Project-based learning ceased to be mandatory.

[28] Gazeta Prawna (2006) Konsultacje MEN nie tak szerokie jak zapowiadano. https://www.gazetaprawna.pl/artykuly/953445,organizacje-spoleczne-konsultacje-men-nie-tak-szerokie-jak-zapowiadano.html (access 28.11.2019)

The changes introduced by the Ministry of Education were not based on evidence, but on the notion that schools were not working properly. Teachers universally perceived this as a negative evaluation of their work and the many years of their constant efforts to improve the quality of education. Breaking up teams of teachers at lower secondary schools and wasting their valuable achievements, resulting in a loss of local social and professional capital, was a serious problem. The outcomes of numerous training courses based on the old curriculum and addressing specific needs of the students at each of three levels of schooling were dissipated and plans for new professional development programs had to be modified, because their recipients and their training needs were no longer the same. Despite feelings of disappointment and discontent due to the changes, teachers have not abandoned long-term projects aimed at the development of key transversal competences, particularly in sciences and foreign languages. The impact of the steps taken by the new government will, however, only become clear in a few years.

The draft of this chapter was finished in the autumn of 2018. Within the following months some important developments take place in Poland which are briefly described below.

The autumn of 2018 was marked in Poland by big scale salary protests of young medicine doctors, policemen and teachers. At the beginning of 2019 the biggest teacher trade union (ZNP) Executive Board adopted a resolution regarding a collective dispute inviting the government to start negotiations on increase of the salaries by 30%. As there was no response to the invitation schools started strike referenda. The determination of teachers community turned out to be stronger than the pressure exerted by public authorities, as more than 80% of schools took part in the strike referendum. The government not only refused to respond to the union demands but at the same time the government party promised of substantially more spending on family benefits and to offer financial support for farmers.

The strike of the majority (70–80%, more than half million) of Polish teachers started on 8 April, just days before key school exams, i.e. end-of-primary school and middle school exams. The rise the salaries (among of the lowest in OECD member states) was not the only reason for the protest. Teachers were fed up with the chaos and overloaded curriculum the effects of the reform of 2017 (especially elimination of the lower secondary schools) introduced without any consultations with teachers.

What was slightly surprising, teachers' strike got a strong support from the society. Most of parents did not complain and instead they organized themselves to collaboratively take care for their children during normal school hours. Many employers offered the possibility to bring kids to the company or office premises and some companies even hired professionals to take care and offer learning activities for the children. Local governments sponsored open access to public institutions like museums, zoo etc. People collected money to compensated the salary loss of striking teachers.

There was an important phenomenon which accompanied teachers protest – Citizens Debate on Education (Narada Obywatelska o Edukacji – NOoE)[29]. It was

[29] https://www.naradaobywatelska.pl/

initiated by the web-based informal groups of teachers and educators (*JaNauczyciel* – Me-the-Teacher; *Protest z wykrzyknikiem* – Protest with exclamation mark) and supported by non-governmental organization *Stocznia* (the Shipyard) experienced in advocacy for public policy programs. *Stocznia* proposed the world café format for debates and made available dedicated website with the simple manual how to organize the debate and the template for collecting basic information (location, number of participants) and summarized outcomes. The debates were organized already prior to the strike, during the strike and when it was suspended. All together more than 150 debates took place all over Poland with active participation of teachers, parents, students and local authorities. Collected summaries and conclusions are analyzed and are intended to inform policy debates during election campaign to the Parliament (this autumn).

The impact of those activities might be seen already within months.

7.6 Summary

The three recent reforms of the Polish education system – including the 1999 system reform, the reform that reduced the school starting age, and the recent reform that reversed the two previous ones – were all introduced in haste, in a top-down fashion, without sufficient support for teachers, and with mixed public opinions.

An in-depth analysis of decision-making in the field of education in post-communist countries was presented by Joan Nelson[30] in a World Bank report. She identified many similarities in the methods of operations of countries which recently adopted a democratic system. She claimed the new authorities focused their attention on economic and political changes, while the public services sector was not treated as a priority. What followed was that the ministries responsible for public services did not have enough political clout, especially in applying for public funds. Moreover, high ranking officials from the Ministry of Education were quite often recalled from their duties, not only after a change of government, but also under the same government[31]. Decisions made by one government were often undermined by the next one. In such circumstances the development of a long-term education policy becomes impossible. The only chance to carry out changes was to prevent the adversaries from modifying the decisions of the predecessors.

J. Nelson also points out the essential role of teachers in the education system, who are often disregarded by the authorities. If reforms are not approved by the teachers' community, either changes will not occur or will only be superficially implemented. Gaining teachers' approval requires a good communication strategy,

[30] Nelson J, (2000) Reforming Health and Education. The World Bank, Washington DC;

[31] Śliwerski B, (2009) Problemy współczesnej edukacji. Dekonstrukcja polityki oświatowej III RP. Wyd. Akademickie i Profesjonalne, Warszawa.

thorough negotiations, and sufficient time. There are various reasons why teachers distrust change, especially ones that risk destabilizing the principles of their work with students, diminish their professional prestige, or reduce their salaries. Thus, education authorities find themselves in a trap. On the one hand, the introduction of positive changes requires rapid measures and seizing the moment, and on the other hand, successful reforms must be preceded by long-term action, broad consultations, and consensus with various interest groups and political parties.

The outcome of actions undertaken in the absence of agreement between the government and opposition is dramatic for the education system. The introduction of new radical reforms every few years often results in resistance or discouragement among teachers due to new working conditions, changes in school groups, and damaged cooperation between people. This presents a threat to all reforms aimed at the modernization of the curriculum as well as the methods and means of teaching and learning. It is much easier to refurbish buildings and replace textbooks than to modify solid didactic methods. The Polish teachers, who worked in the schools of so called "real socialism", later had to reject the values they were previously supposed to believe in. They ultimately experienced a succession of reforms every few years with subsequent changes in curriculum and teaching methods. Hence, they became proficient in the art of mimicry. Some of them report on applying innovative methods expected by the authorities, but change very little, perhaps nothing at all, in their relation to students or teaching methods.

It should also be mentioned that the essence of the 1999 reform was the establishment and opening of new possibilities. Lower secondary schools were the symbol of the reform. They were to ensure better conditions for teachers and students. The introduction of change was to rely on the involvement of entire teams working in schools, with the support of local authorities. The Minister emphasized that he believed in the competences and capabilities of the teachers, which made changes for the better possible.

A completely different message came from the Ministry during the introduction of the newest reform. The Minister emphasized more than once that the current system was not working well, but she never specified the weaknesses or their origin. Teachers could very well see this as a low assessment of their work. The proposed remedy was the elimination of lower secondary schools and an unclear prospect of returning to the "good old days". Destruction and focusing on the past do not encourage involvement in the process of change.

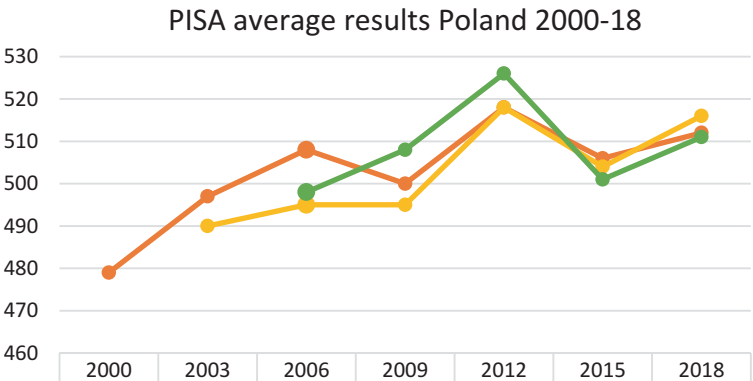
On December 3, 2019 the results of PISA 2018 were released. Polish students keep on improving the results (see Table 7.5 and Chart 7.2) which are significantly beyond the OECD average. Such scores place Poland among top performers in Europe.

Normally, that should be a reason for satisfaction, proud and celebrations. But not in Poland in 2019. Students who sit PISA test in March 2018 were the last group attending lower secondary schools which were being shut down as the result of the 2017 "reform". It is a paradox that we have a sound evidence that those schools were good schools when they do not exist anymore.

Table 7.5 Trends in mean performance of Polish students in PISA

	Reading	Mathematics	Science
Average 3-year trend in mean performance:	+4.5[a]	+5.1[a]	+2.1
Short-term change in mean performance (2015–2018)	+6.2	+11.2[a]	+9.6[a]

[a]Indicates statistically significant trends and changes, or mean-performance estimates that are significantly above or below PISA 2018 estimates
OECD (2019), PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, https://doi.org/10.1787/5f07c754-en



	2000	2003	2006	2009	2012	2015	2018
Reading	479	497	508	500	518	506	512
Mathematics		490	495	495	518	504	516
Science			498	508	526	501	511

Chart 7.2 PISA average results – Poland 2000–2018 (OECD (2019), PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, https://doi.org/10.1787/5f07c754-en)

Chapter 8
Curriculum and Educational Reforms in Portugal: An Analysis on Why and How Students' Knowledge and Skills Improved

Nuno Crato

Abstract By the turn of the century, following the dismal first results in TIMSS and PISA, the Portuguese educational system was at a crossroads. It was clear that students were not attaining minimal levels of proficiency in reading, math, science, and other basic subjects. The system needed a deep reshaping, and so changes were made. By the time the last PISA and TIMSS international large-scale surveys' results were released in 2015, Portugal registered a quantum leap: in PISA, student achievement was above the OECD average and in TIMSS, 4th graders had higher scores in Mathematics than several usually high-performing countries, including Finland. How was this possible? To understand what happened, we need to look at what Portugal has done in the last 10–15 years. Although many different ministers from different ideological standpoints made different reforms, there is a common thread to most changes: they paid increased attention to results. This proved to be a powerful thrust for improvement, backed up by experienced teachers. However, this general thrust assumed many concrete different aspects and promoted different reforms. During the 2011–2015 period, these reforms went further and were very clear, intentional, and explicit: a clear curriculum, increased school autonomy, students' regular assessment, vocational paths, flexibility. All this helped to prepare youngsters for an active, productive, and responsible life in the twenty-first century.

8.1 Introduction

Portugal arrived late at the twentieth century and took a long time to recover from illiteracy, poverty, isolation, and a very limited school system.

Only in 1956 was compulsory schooling extended from 3 to 4 years, and only for boys. The same extension included girls in 1960. In 1964, compulsory schooling was extended to 6 years and in 1967 the so-called preparatory unified cycle ("ciclo

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F. M. Reimers (ed.), *Audacious Education Purposes*,
https://doi.org/10.1007/978-3-030-41882-3_8

unificado") was created, allowing all students to attain the same type of instruction until 6th grade. Only in 1986, compulsory schooling went up to the 9th grade. And only in 2012 up to the 12th grade.

In the 1970 census, 4 years before the democratic revolution, almost 18% of the population was still illiterate, 66% of 15-year old hadn't completed any level of formal education, and only 0.9% of the total population had a higher education degree.[1]

The progresses made during the last decades of the twentieth century are extraordinary. Following the general improvement of economic conditions after the 1960s, the euphory of a baby boom, a restored democracy, the entrance in the European Community, and the arrival of European structural funds, schooling expanded, and the country changed completely. In 30 years, as the 2001 census reveals, illiteracy dropped from 18% to 9%, the percentage of 15-year old without any level of formal education dropped from 66% to 9.2%, and the fraction of the population with higher education raised from 0.9% to 8.4%.

All these successes were essentially quantitative, i.e., they democratized education, expanded the school system, and increased compulsory schooling. But they apparently failed to bring youngsters to reasonable levels of literacy and general education.[2] A debate about the quality of education divided the country.

On the one side, educationalists, promoters of reforms, politicians in power, and professors of the new teachers' colleges created in the late 80s replacing the old normal schools of education, all defended the system and sustained that democratization of education was not degrading the average level of middle and high school graduates.

On the other side, college professors, middle-age intellectuals, both from the traditional left and conservatives, accused politicians in power of degrading education, lowering standards, and bringing romantic and unrealistic ideas into the educational realm.

Although to take sides is highly contentious, one has to say that the first group rightly stressed the successes of democratization and correctly criticized a very traditional teaching system. By the same token, the second group rightly stressed the need to raise curricular goals and correctly criticized the flaky ideas that condemned basic knowledge as an outdated concept (Crato 2006).

Shocking news were awaiting the country. TIMSS[3] 1995 showed Math 4th grade Portuguese students at the bottom of the scale, with only two countries, Iran and

[1] Pordata, https://www.pordata.pt/ consulted 3 August 2019.

[2] Similar analyses have been made in various contexts, highlighting the need to look for outcomes beyond the inputs. See, for instance, Donnelly et al. (2019).

[3] TIMSS (Trends in International Mathematics and Science Study) is a large-scale assessment designed to inform educational policy and practice by providing an international perspective on teaching and learning in mathematics and science. TIMSS is a project of the International Association for the Evaluation of Educational Achievement (IEA) and is directed by the TIMSS International Study Center at Boston College in collaboration with a worldwide network of organizations and representatives from the participating countries.

Iceland, behind. In 2001, as PISA[4] 2000 results were released, Portugal saw its students below average in all three areas (Literacy, Math, and Science) and much below the OECD average.

Results did not end the debate, as any politized debate is never resolved? But critics of the educational system gained more authority in demanding new reforms focused on the quality of education.

During the ensuing years, the debate continued and took many forms. Reforms in the school system were at times contradictory and served different purposes, but until 2015 they essentially went into one clear direction: to pay more attention to the results.

In the following sections, I will detail the history of these changes and highlight various reforms that facilitated a better performance of Portuguese students in large-scale international surveys. In Sect. 8.2, I will describe the pragmatic reforms done during 2001–2010. In Sect. 8.3, I will explain in detail the reforms undertaken during the years 2011–2015, a period that saw a great improvement in students´ results. In Sect. 8.4, I will highlight what modern twenty-first century concerns were put in place. In Sect. 8.5, I will conclude.

8.2 From 2001 to 2010: Pragmatic Times Yield Pragmatic Reforms

If we want to pinpoint a date for the triggering of the positive reforms that led to steady and significative improvements in the Portuguese system, we could point to 2001. It was then that the Minister of Education released – for the first time – the average results per school based on the high-school exit exams. This ended a bitter public debate. For years, opinion makers, journalists, and some politicians in the opposition to the ruling party[5] had been claiming the right to know schools' results. For years, the ruling party blocked this disclosure. It was only through threats of legal action, based on the law of disclosure of administrative data,[6] that the government was forced to release these data.

[4] PISA is the Organization for Economic Co-operation and Development (OECD) Programmed for International Student Assessment. Every 3 years after 2000 it tests 15-year-old students from all over the world in reading, mathematics and science. The tests are designed to gauge how well the students master key subjects in order to be prepared for real-life situations in the adult world.

[5] Here as in other parts of this text, when possible I purposely avoid the naming of ministers and political parties, as I believe different people in different situations could act differently. The issues are political in nature, but independent of the parties. Fortunately, or unfortunately, stands in education are transversal to the left and the right, and to put labels may contribute to confuse the questions.

[6] "Constituição da República Portuguesa", art. 268.° and "Código do Procedimento Administrativo" approved by D-L 442/91, 15 of November, revised by D-L 6/96, 31 of January.

When data were finally released, parents, school administrators, teachers, students, and the general public could look at each school and see how it stood in a comparative framework. Soon, the data release was taint with rankings made by different newspapers and entities and this diverted the attention from the essential problems. But the data release was an eye opener and let to positive effects in the country. People realized that there were very good schools and not so good schools in wealthy areas. Similarly, there were very good schools and not so good schools in disadvantaged areas.

Of course, there was and there is a positive correlation between the socio-economic status (SES) of students and schools' results. But it also become clear that some schools are more effective than others at bridging the achievement gap related with SES. Each school could do better and that the economic conditions are not an unsurmountable obstacle. Schools can fight against the disadvantageous background of their students. Schools can do better.

By November 14 of 2001, the OECD released the first PISA results.[7] This international survey started in 2000 in 28 OECD countries and four partner countries. Later, other 15 countries and regions joined the same 2000 survey. Portugal participated in PISA since its inception, as most European Union countries did.

Portuguese results were disappointing: performance was below the OECD average in all three areas (Reading, Mathematics, and Science). In Reading, only four countries had a lower average (Russia, Latvia, Mexico, and Brazil); in Mathematics, only four countries had a lower average (Greece, Luxemburg, Mexico, and Brazil); and in Sciences only three countries had a lower average (Luxembourg, Mexico, and Brazil).

These results prompted an outcry from many influential opinion makers and some politicians. When a new government took office a few months later, in April 2002, the new minister of education immediately announced a task force for improving the curriculum and the constitution of a commission for the improvement of mathematics and sciences teaching. Exams were established for Mathematics and Portuguese subjects at the end of compulsory schooling (then the 9th grade).[8] The country was in an educational reform mood.

Then, things changed again. Prime minister Durão Barroso resigned to be appointed President of the European Commission. The President dismissed the government and new elections were held. The then main opposition party won the elections and a new government took office in March 2004. It's telling that the new education minister, although appointed by a rival party, maintained the exams instituted by the previous government. In fact, it was this new minister who for the first time presided over the new exams, held the same year in June.

The same minister decided to concentrate efforts on mathematics and reading. She instituted an action plan for mathematics ("Plano de Acção da Matemática")

[7] OECD/UNESCO Institute for Statistics (2003)

[8] The first time these exams were held was at the end of the school year 2004/2005. They are still in place.

and supported another one for the Portuguese language ("Plano Nacional de Leitura"). The plan for revamping mathematics concentrated on elementary and middle school mathematics and was very controversial. It was largely made of actions for explaining to teachers how to teach mathematics according to the recommendations that had already been largely followed. It didn't address the shortcomings of math education as it had been practiced during the last decade: a poorly structured curriculum, the avoidance of basic skills training with the pretext of eschewing rote learning, the abuse of calculator's use since first grade, and the sort. Nevertheless, this plan helped concentrate efforts on the teaching and learning of this basic discipline and helped to focus on this discipline results in school and national tests.

The reading plan was noncontroversial. It was essentially noncurricular and only established voluntary actions, mainly in school and public libraries, to popularize reading amongst the youngsters. Although its effects have never been seriously evaluated, it also helped to focus attention on this basic subject.

The next minister stayed in office for less than 2 years (October 2009 to June 2011) and continued this line of efforts to pay attention to the results on basic subjects. She needs to be credited with the introduction in Portugal of the first *learning standards*, following an Anglo-Saxon lead. These standards did not replace the existing curriculum, they simply tried to introduce a clearer structure to it.

In Portugal and other countries with a very centralized systems, the curriculum is subject-based and essentially consists of a set of official documents called *programs* ("programas"), which detail the topics to be covered in each school discipline or subject.

These programs typically explain the choice of topics, the way to approach each topic, and the learning objectives. But they go further. They often explain the type of assignments and projects that should be given to students, the materials and the required readings. They may detail pedagogical recommendations, including teaching methods, assessments, and other means used to convey the course content. However, they are usually vague regarding intended learning outcomes.

In contrast to programs, standards typically organize the course contents sequentially, highlighting the learning goals, and the level of attainment desired for each content. They abstain from pedagogical recommendations and favor the setting of detailed learning outcomes.

The first learning standards appeared in 2010 and 2011. Although they represented a progress from the vague programs of the time, they still included pedagogical recommendations mixed up with learning outcomes, they still didn't clearly highlight knowledge goals, and they were still vague in some areas.

By December 2010, PISA 2009 results appeared and showed an important improvement in all PISA areas. Some analysts stressed the importance newly instituted 9th grade exams may have had, while others stressed the new policies of increased attention to results in basic subject areas. In my opinion, both points are correct.

In June 2011, elections were held, a new majority was formed, and a new prime minister was chosen. I was then appointed as an independent minister responsible for Education (all levels) and Science.

To understand the political and economic background during these years, one must recall that in June 2011, Portugal was coming to grips with the most serious financial crisis of its recent history. The state was financially broke and unable to adopt the common short-term solutions for monetarily independent countries — as a member of the European community the country had adopted the common currency, the euro, 12 years earlier. In May 2011, a bailout was agreed with the IMF and the EC, and the government fell. Elections were held and a new prime minister, the social democrat Pedro Passos Coelho was appointed. The bailout agreed by the previous government included drastic spending cuts. Along with the health and social security systems, education expenditure had to be seriously reduced.

Against this background, and abiding by a Law approved by the previous parliament, we expanded compulsory education from 9 to 12 years and decided to enrich an outdated curriculum, which had no compulsory English, for instance.

When expanding compulsory schooling, we were very conscious of the fact that there were risks associated with this move. Firstly, there were logistic risks, as more students enrolled in secondary schools with limited capacity. These risks were dealt with a very detailed national and local planning and we were able of accommodate all students. Secondly, there were risks of quality decrease. We had still present the concerns on quality decrease in education, on the aftermath of 1986 extension of compulsory schooling from the 6th to the 9th grade. This was actually the first large discussion on education in the ministers' council. To my pleasant surprise, some ministers made echo of the concern on quality and we introduced a completely new plan for improving the quality of education and get special help for students with academic difficulties. All this is discussed in detail at Sect. 8.3.

I am still amazed by the fact that even under budget cuts, salary cuts and increased responsibilities, teachers and schools were able to answer the call, expand schooling, accept more students, offer a more diverse curriculum, and still improve education.

8.3 From 2011 to 2015: A Deliberate Effort to Strengthen the Curriculum and Attain Demanding Curricular Goals

The reforms put in place during the school years 2011–2012 through 2014–2015 were clearly oriented towards quality learning. We can group these reforms in five essential areas.

8.3.1 A Demanding and Well-Structured Curriculum

Everything starts with the curriculum, as we clearly stated and repeated throughout the education reform debates.[9] The curriculum defines learning goals, and learning goals are the starting point for all education.

In Portugal, curriculum is defined centrally and approved by the minister. For instituting the new standards and programs, we set up groups of experts for each discipline. Typically, each of these groups was constituted of (i) expert teachers of the discipline, (ii) university-level professional researchers of the same discipline, (iii) cognitive psychologists and other researchers on the discipline education. This contrasted with previous discipline group designers, which were typically constituted of (i) teachers' associations members and (ii) professors from colleges of education.

8.3.1.1 Knowledge Comes First

Even when we stress skills, the so-called competencies, attitudes, or civic goals, the school loses its purpose if it doesn't convey knowledge. Even when we are keen on critical thinking, cooperative learning, and the application of knowledge, we shouldn't forget that knowledge is the base for civic participation, for critical thinking, for action.

We had it very clear: without a base in substantive knowledge, students cannot get an appreciation for any subject, cannot develop advanced skills, cannot progress in any career, cannot attain higher-level knowledge and skills in any subject.

When we overstress skills and competencies, we may lose knowledge grounding. and forget that skills are essentially domain-based. Generic skills are difficult to develop, and skills' transfer is limited. Without solid domain-specific knowledge, students do not get an appreciation for any discipline, do not realize the structure of any subject. Mathematics is not a collection of tricks, the same way writing is not a collection of rules and literature is not a collection of grammatically correct sentences.

This means that students need to get in-depth knowledge in some subjects. Breadth should not and cannot be attained at the expense of structured knowledge.

8.3.1.2 To Prioritize Basic Knowledge

An illiterate child is forever handicapped if he or she doesn't acquire fluency in reading. A mathematically deficient child is forever handicapped if he or she doesn't develop basic arithmetic ability, elementary graphical data analysis capability, and rudimentary formal logic skills.

[9] See, e.g., Crato (2018).

As the Australian New South Wales Department of Education put it,

> "We know that literacy and numeracy skills are the foundation for success in learning and in life." [and so, our] "efforts will ensure our students have the essential literacy and numeracy skills they need because those literacy and numeracy skills are described clearly, taught explicitly, assessed meaningfully and reported regularly in all NSW schools over the next four years."[10]

The first decision we took in developing a more demanding and better structured curriculum was to define priorities. And the priority was the focus on fundamental subjects and basic knowledge. This means that we allotted more time for Mathematics and Reading right at the start of elementary schooling, and we organized better the curriculum for these basic subjects. Later, we extended this priority to other basic subjects, namely History, Geography, Sciences, and English.

As we reorganized the curriculum, we decided the opposite of a complete overhaul of the previous curricular documents: we decided to adopt small incremental changes, but all in the same direction. This way, instead of rewriting all the programs, we started organizing them by supplying new standards ("metas curriculares"). These new standards had multiple pedagogical purposes:

- To clarify the *basic topics* needed to be mastered by students
- To set up the *desirable levels of attainment* for each topic
- To be *more demanding* on each basic discipline content
- To organize topics in a *better structured* and clear *progressive* way
- To help *scaffold* knowledge and skills in levels or *layers* of domain

At the same time, these standards intended to be clear to everybody involved:

- *Teachers* would understand better what students should attain
- *Parents* would be able to help their children and check how they are advancing in the classroom
- *Textbook authors* would know better what is expected from them
- External *textbook reviewers* and certifiers would have more clear guidelines regarding the evaluation and certification of textbooks
- Exam and national assessment *test designers* would know better what to select for testing and the levels of attainment expected from students

This general alignment proved essential to get everybody on board, all aiming to attain the same goals. Although this seems obvious, it's worthwhile to underline it: a well-defined curriculum helps textbooks to be aligned with the desirable goals, helps teachers, helps the development of reliable and valid national assessments, helps parents, helps students.

[10] New South Wales Government Department of Education (2017). See also Centre for Education Statistics and Evaluation (2017).

8.3.1.3 Teaching Resources Aligned with the Curriculum: Textbook Quality

Textbooks have been and still are a central tool for conveying the curriculum. Textbooks can be in paper, digital, or blended, but the most important thing is that they should be of high quality in order to help teachers and students.

Important steps were taken in 2006 for improving textbook quality. The parliament and the government approved new legislation[11] for the evaluation and certification of textbooks by independent entities. This was a major step in improving the quality of textbooks.

As we redefined curriculum content and organization, the new standards helped this process by setting clear guidelines that textbook authors used. This was put in practice as soon as December 2012 and reorganized in 2014[12] in view of setting up a general and systematic procedure for the analysis, correction, and certification of textbooks.

Textbooks aligned with standards and thus also aligned with standardized evaluation proved to be helpful to teachers, simplifying their work[13] and providing a secure guide. This somehow replaced teachers' networks that in Portugal are less active and in some other countries have proved essential for aligning teaching standards across schools. By the same token, students and parents could use textbooks to attain the desired learning outcomes.

8.3.2 Frequent and Reliable Assessment

A lesson stressed in OECD studies is that assessment should be aligned with standards.[14] We should apply this evidence, based on statistical analyses, to student evaluations. In Portugal and other southern European countries, including France, assessments serve multiple purposes[15]:

[11] The evaluation and certification of textbooks by external independent certifying centers was set up in a 2006 Law (Lei n.° 47/2006 de 28 de Agosto), regulated by the government (Decreto-Lei n.° 261/2007 de 17 de junho) and further defined in 2012 (Decreto-Lei n.° 258-A/2012 de 5 de dezembro) and 2014 (Decreto-Lei n.° 5/2014, de 14 de janeiro).

[12] Decreto-Lei n.° 258-A/2012, de 5 de dezembro, set up a procedure for quick adaptation of textbooks to the new standards and Decreto-Lei n.° 5/2014, de 14 de janeiro

[13] As the head of the major Singapore textbook publishing house put it with good textbooks, "teachers can concentrate on students' learning; so instead of preparing materials, they prepare good lesson plans". Joy Tan, communication at the Second Cambridge textbook Summit, at Reykjavik, June 2019.

[14] *Idem, ibidem,* p. 42 and passim.

[15] Morris 2011

– National standardized high-stakes tests, in short, exams, that may determine the retention or continuation of studies; they are usually taken at the end of a school cycle (lower and upper elementary, middle, and high school)
– National standardized low-stakes tests that act as surveys of educational progress, with no impact over students, schools or teachers
– School-designed tests
– Class tests designed by individual teachers

At the outset of the democratic revolution of 1974, the successive governments abolished many of the national exams, and tried other types of tests. Only at the end of the twentieth century, a new socialist government set up a new state-run subdepartment in charge of organizing a more modern testing framework for the high-school exit tests.[16] Later, the same government introduced low-stakes standardized tests, which first were just sample surveys and only later were applied to the whole school population in certain grades.

The system gave some information about students' achievement levels, but it was very limited. After a few years, low-stakes tests were largely discredited in the public opinion. One of the reasons for this was the fact that they had absolutely no influence on students, teachers, or schools. At the same time, many opinion makers and some scientific societies, namely the Portuguese Mathematical Society (SPM), criticized the fluctuation in the difficulty level of some exams. In fact, exam average results had fluctuations from year to year in the order of 50%. This was the case in 2008 for Mathematics, which was difficult to explain by sudden changes in students' performance leaving room for the explanation that changes were due to poor test design and/or from tampering with the difficulty of the tests.

This situation prompted us to introduce a major reform. A 2013 law[17] created a new assessment institute, the "Instituto de Avaliação Educativa, (IAVE)", with the mission of organizing all external students' evaluation, both low-stakes and high-stakes standardized tests. This law stressed a well-known result from cognitive psychology, according to which evaluation reinforces retrieval in a way that helps knowledge reinterpretation and consolidation.[18] This 2013 law may well be one of the rare ones in the world that directly cites results from modern cognitive psychology.

Two principles guided the creation of this institute. The first principle was the need to create evaluation instruments with greater *validity and reliability*, allowing to compare results from year to year.[19] The preamble to the law also recognized that

[16] The "Decreto-Lei n.° 229/97, de 30 de agosto" created the "Gabinete de Avaliação Educacional (GAVE)"

[17] "Decreto-Lei n.° 102/2013 de 25 de julho".

[18] See, e.eg, Roediger and Karpicke (2006).

A general reference on retrieval and learning as well as other educational applications of cognitive psychology to education is McDaniel and Callender (2008).

[19] "a aplicação de instrumentos de avaliação válidos e fiáveis, construídos de forma a permitir a comparação temporal e transversal dos resultados." (D-L 102/2013).

external evaluation with these characteristics plays an important regulatory role, both helping the validity of all other evaluation instruments and promoting equity through a fair assessment for different schools and regions across the country.[20]

The second principle was the need for and *independent evaluation*. The previous department (GAVE) was under the direct control of the minister and so the tests' difficulty could be tampered for political purposes. The new institute (IAVE) was directed by a General Council constituted by members appointed by different institutions, including public and private universities, the schools' principals' assembly, the private schools' association, teachers' associations, and scientific societies. Moreover, independence was enshrined into law, preventing ministers from directly instructing the institute. Exams' orders from the minister's cabinet had to be written and made public.[21]

8.3.3 A Plan for School Dropout Reduction and Success Promotion

To have a demanding curriculum and standardized student evaluation has been very controversial during the last decades. Some have argued that these two factors magnify social inequality and harm the children coming from disadvantageous backgrounds.[22] We have argued the opposite: a serious education and reliable assessment according to national standards is the only way to help children from disadvantageous backgrounds to prepare for an active, productive, and independent life.

I think we have taken a moderate and effective approach. In parallel to striving for high academic standards, we devised a series of measures to improve students who trailed behind and, at the same time, to allow more advanced students to flourish by pursuing their specific interests. These measures were set out as early as 2012 in a special law[23] and complemented by regulatory legislation that made the support to students with academic difficulties compulsory:

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[20] "a avaliação externa desempenha um papel essencial, seja pelo facto de auxiliar uma avaliação fiável em vários momentos da escolaridade, incluindo a avaliação formativa e sumativa interna à escola, seja pela equidade que permite promover na valoração dos conhecimentos e capacidades desenvolvidos nas diversas escolas e locais do país"

[21] Although I'm still proud of this reform, I regret the institute independence did not go as far as it should. Unfortunately, the institutions that appointed the General Council acted perfunctorily, they did not follow the institute activities. Maybe a different type of legal design for this council could have helped it to gain more independence.

[22] As we know, this is an old debate, recently fueled by a standards and testing policy designed during the George W. Bush administration and pursued in many aspects by the Barak Obama administration. Critics go from rightly pointing the limitations of standardized testing (NCTE 2014) to radically associate curriculum and testing with eugenics and purposed exacerbation of inequalities (see, e.g., Wayne 2009).

[23] "Decreto-Lei 176/2012 de 2 de agosto."

– For elementary schooling (1st–6th grades), student-study help and special extra help at scheduled times
– Temporary grouping of students with difficulties for special extra help, while maintaining them in their original class
– Incentives to schools for using teachers' school hours for helping teachers and students in different grades (see comment below)

The first measure essentially led to teachers using their free or idle school time for useful purposes. The second measure could be called "temporary tracking", but in reality it's the opposite of tracking, it's a school effort to maintain classes intact. The third measure was very successful, as elementary teachers used help from middle- and high-school teachers to teach and to help teach subjects such as mathematics, reading, music, and physical education at arranged times.

8.3.4 School Incentives and School Autonomy

With a very limited budget and under pressure from the IMF and the EC to further reduce spending, incentives had also to be very limited. This may well have been a blessing, as incentives were mainly tied to school improvements and not with monetary rewards tried elsewhere and that proved to be very limited and highly controversial.[24]

In addition to moral incentives, such as prizes and public recognition from published school results, incentives were limited to the increase of teacher hour credits.

In order to understand the system, we must know how the highly centralized Portuguese school system works. Each school year is prepared with a tally of students enrolled and an estimate of the number and characteristics of teachers needed. Those needs that aren't covered from existing teachers in the school staff are supplied centrally by the ministry by using idle teachers from nearby schools or by temporary hiring of new teachers. After this process is over, the ministry supplies some extra teachers for supplementary needs. These supplements are counted as "teachers credit hours". Every school likes these credit hours as they allow for alleviating the contact hours of staff teachers and for organizing extra-curricular activities. Up to 2012, this worked in an automatic fashion. After 2012, we developed a complex system to increase credit hours to schools as that proved to be able to improve students results with these extra resources.

8.3.4.1 Incentives to Schools Tied to Students' Improvement

This system took into consideration students internal and external evaluations, retention and dropout rates. Schools got credits for:

[24] See, e.g., Shifrer et al. (2017) and the references therein

– raising their internally evaluated student results
– raising their externally evaluated student results
– obtaining good externally evaluated student results
– reducing the retention and dropout rates

and these credits were penalized for:

– having internal evaluations higher than standardized external evaluations.

In addition, these credit computations took into consideration the recent past in school performance and could be adjusted if the student background changed.

The main criticism to this system is that it rewarded schools that could improve and penalized those that didn't improve. But I think this "criticism" results into a favorable appreciation of the system. Resources should be employed for the benefit of students.

8.3.4.2 School Autonomy

This incentives' system could only work thanks to some increase in school autonomy.[25] The moto was the opposite of what some previous governments had sustained: we wanted *freedom in the processes but external evaluation* of students; previous governments wanted to dictate pedagogic practices and to avoid evaluation. Thus, *they controlled processes instead of measuring outcomes*.

This increased school autonomy allowed schools to organize teacher hours freely, to switch teachers and schedules, and to organize subjects according to a year or cycle logic. Most importantly, it allowed schools to freely use their resources in order to put in place the promotion-of-success measures described in Sect. 8.3.3. For many observers, such as north American ones, this is trivial, but for a highly centralized system such as ours this was a significant change.

8.3.5 Parallel Offers and Vocational Tracks

Another major reform was the slow change in the vocational system. Vocational tracks were abolished after the democratic revolution, but slowly restored with the creation of technical tracks in 1983 and the creation of secondary professional schools in 1989. However, the vocational system was very unequal and not always completely aimed at providing students with the training necessary for a modern

[25] It's one of my greatest frustrations the fact that we were unable to significantly increase school autonomy. In fact, we learned the hard way that very few agents in our society want greater autonomy for schools. Many parents' associations want the State to take care of all charges and responsibilities, many principals avoid hard decisions, and, above all, unions oppose fiercely anything that departs from national collectively negotiated agreements.

profession. For many private schools, it was a business completely dependent on public subsidies. For many semi-private schools owned by municipalities, it played a political role in employing teachers and technical staff. In many cases, the focus wasn't on students training: offered courses depended more on local resources than on youngsters' needs or job market needs.

Reforms started in 2012 had to take into consideration the fact that compulsory schooling was extended from 9th to 12th grade, which means that vocational high-school tracks could and should become part of the compulsory schooling. Our reforms went essentially into these directions:

– *To divide vocational tracks into two streams:* one directed at regular students opting for a less academic training that could prepare them for entering a technical profession, another directed at students with difficulties who needed, temporarily or for the remaining schooling, more practical and hands-on activities. Without this division, vocational studies would always be associated with the idea of a second choice.[26]
– *To associate industry* to the vocational training. This involvement was from the start and integrated at all levels of training: in the creation of specific programs and courses, in lab trainings, and in the final stage of vocational training.

Although businesses were not paid for their contribution to the students' training, they gladly joined the programs. Here, we not only witnessed a generous contribution to the future of the country but also a defense of business interests: as they were contributing to the job market needs, they were preparing human capital for their counterparts. This was also a surprising trend. Registering a serious vocational investment, businesses contributed with human resources such as training personnel and with material resources such as access to factory tools and machinery, free transportation and free meals to students. In the first year of this program, about five thousand firms of all sizes contributed to the program. In the second year, about twelve thousand.

8.4 A Curriculum for the Twenty-First Century

There are many ways in which our reforms were oriented towards twenty-first century needs. The first, although apparently redundant, and *only apparently so*, deserves to be stressed: the focus on quality.

[26] The same division, or even into more than two tracks, exists in countries with a more developed vocational system such as Germany, Switzerland, and Austria. Unfortunately, in 2016 and for ideological reasons, this division was abolished. Students in the remedial track returned to previous nonorganized ad hoc modular training with no compulsory academic courses (the so-called CEF and others).

8.4.1 Providing High-Quality Education for All

The situation around the world has improved tremendously, but in education we still have inexcusable gaps. A recent UNESCO report is correctly titled "More Than One-Half of Children and Adolescents Are Not Learning Worldwide".[27] As described in this report, the fraction of children and adolescents not achieving minimum proficiency levels (MPL) for their age group is 56% for mathematics and 58% for reading. This phenomenon is not exclusive of low-income countries. The same numbers for North America and Europe are, according to the same source, 14% for both areas.

For Europeans, it is even more worrisome to know that these numbers are not improving. The European Union had set a 2020 target of reducing the share of low achievers in PISA[28] to 15%, but the average for all member states is not approaching this target.

For mathematics, the share of low achievers in 2015 was 22.2% in 2015, up slightly from 22.1% in 2012. For reading, the corresponding shares were 19.7% in 2015, up from 17.8% in 2012. And in Science, the corresponding shares were 20.6% in 2015, up from 16.6% in 2012.

As the EU Commission sadly recognizes, only two countries were able to reduce the share of low achievers simultaneously in all three PISA domains: these countries were Sweden and Portugal.[29]

8.4.2 To Promote Equal Opportunities Through a Demanding Education

I think all previously quoted numbers make it very clear: to have a high-quality education for all children and young adults is not an outdated goal, even in Europe. And we cannot approach it unless we pay special attention to the quality of education for all, including the less favored by their academic environment.

It is telling that the country improved in almost all common indicators. Dropout rates decreased sharply. In 2000, early leavers were at a rate of 43.6%. In 2010 this rate decrease to 28.3% and in 2015, it attained 13.7%, thus decreasing 14.6% in 5 years, a rate of almost 3% points per year. Remarkably, after 2012 this decrease happened in parallel with a decrease in 25-year-old and younger unemployment.[30]

It is also telling that Portugal was able to increase the academic levels of those at the bottom of the scale at the same time the country was fighting for a demanding and well-structured education. As the OECD report on PISA 2015 points out:

[27] UNESCO (2017).

[28] Those with the very minimal proficiency levels 1 and 2 in the PISA scale.

[29] European Commission (2016).

[30] Pordata, consulted 3 August 2019.

"Macao (China) and Portugal were able to 'move everyone up' in science, mathematics and reading performance over the past decade by *increasing the number of top performers while simultaneously reducing the number of students who do not achieve the baseline level of skills.* Their experiences demonstrate that education systems can nurture top performers and assist struggling students simultaneously." The section of the report where this was written is significantly titled "Countries do not have to choose between nurturing excellence in education and reducing underperformance".[31]

I will add that the way to improve education for those from a disadvantaged background is precisely through a demanding, well structured, and ambitious education. As we said at the time, "A exigência é a arma dos pobres", idea that I can roughly translate as "A challenging education is the only instrument for poor people to progress".

8.4.3 To Focus on Permanent and Central Education Pillars

Larry Sanger, co-founder of the Wikipedia is certainly a creative person, an innovator, and someone who has been ahead of most of us. Talking about education he reflected on what type of knowledge was essential for the twenty-first century:

"The specific skills for the work world were, and largely still are, learned on the job. So let's see, which would have been better for me to learn back in 1985, when I was 17: all the ins and outs of WordPerfect and BASIC, or U.S. History? There should be no question at all: what I learned about history will remain more or less the same, subject to a few corrections; skills in WordPerfect and BASIC are no longer needed."[32]

As we are leaving in a rapidly changing word, jobs, professions, and necessary skills are evolving at a great speed. In order to prepare young people for the future, it's more than ever necessary to focus on a basic education that allows young people to adapt in this changing word. This means that the permanent basic pillars of an active and productive civil life need to be acquired by all youngsters:

- Reading and writing fluently helps to understand and organize ideas, a wide vocabulary helps understanding and expressing complex sentiments, impressions, instructions and ideas.
- Mathematics, statistics and logic are crucial to quantitatively reason about our word, to understand society, jobs, finance, the environment, and our society.
- History and geography solid and wide knowledge help understanding the word and be critical about it.

[31] OECD (2016). Italics in the citation are mine.

[32] Larry Sanger (2011).

– Sciences are everyday more necessary to critically develop an understanding of machines, computers, medicine, the human body behavior, the environment and the society.

All these areas are basic and essential for the future. We don't need to invent much. If we provide young people with a solid knowledge and vast skills on these areas, we are already preparing them well for further studying, further learning, and further productive activities.

Of course, we need much much more. As an example, I'm listing two additional areas:

– Art, in its various forms, from music to painting to theatre make us better human beings
– Literature and languages help people widening their horizons and enlarging their professional ambitions and possibilities.

But the main point is simple: while we are failing on the basic pillars we are failing on young people's future.

8.4.4 To Adapt Vocational Training to Country's Future Needs

We already encountered this topic in Sect. 8.3.5. as a recap, I will only stress that a vocational training established by the cooperation of schools and firms facilitates its orientation for the country needs and so may offer a productive future for students involved.

8.4.5 To Increase Curricular Flexibility and Modernity a Par with a Focus on Central Subjects

Curricular flexibility and a modern approach to education are not in opposition, rather in complementarity with a focus on the basic pillars. Our approach to curricular flexibility[33] is to increase schools' power in deciding how to run and how to complement the national curriculum.

This approach allows the modernization of teaching in various crucial aspects:

– look at problems from different angles and
– advance varied examples
– extract general principles from examples and problems

[33] The legal instrument "Portaria n.° 44/2014 de 20 de fevereiro" established a flexible administration of the curriculum by the schools, allowing them to freely use 25% of the curricular time, but required that the basic subjects should abide by the curricular goals.

– propose challenging tasks and problems
– practice cooperation of different subject approaches

However, all this should be embedded in the general class activities to convey knowledge and develop skills. There is no point in promoting transfer, or deep thinking, or creativity outside of substantive learning.

8.4.6 *To Increase Self-Regulation of the Educational System Through External Evaluation*

Almost everybody now agrees that modern education cannot continue to be a highly centralized and rigid activity, as it still is in many countries. At the same time, almost everybody agreed that a nation should take upon its shoulders the task of providing good education to all youngsters.

International examples of failure to achieve reasonable education levels with school autonomy and to have standardized assessment serving education progress show how difficult these trends are difficult to conciliate. Our lesson is clear: external evaluation helps the educational system to progress and regulate itself without intrusive micromanagement form the state authorities.

8.4.7 *To Provide Incentives to Apply Modern Science Consensus*

There are many misunderstandings about how we learn, and cognitive psychology can help us correcting these misunderstandings and guide us to adopt basic well-established principles.

An old and still key finding in cognitive psychology is the fact that we learn by integrating new knowledge in already acquired knowledge. The more we know, the more we can learn. I extract two conclusions from this finding. The first is that knowledge is important and the richer it is, the better we learn. The second is that by layering and organizing knowledge, a well-structured curriculum allows students to progress faster and in a more solid way than they can with a disperse set of activities or with a loose curriculum.

As a group of experts convened by the US National Research Council put it, "Learning with understanding is facilitated when new and existing knowledge is structured around the major concepts and principles of the discipline."[34]

[34] National Research Council (2002).

Another key modern finding in educational psychology is the fundamental role of assessment for memory retrieval and consolidation.[35] Simple repetition, simple repetitive study, and disperse activities are much less useful than retrieving and reorganizing knowledge. Standardized national testing helps local formative assessment and so the reinforcement of knowledge and the practice of skills in various contexts.

Another key finding in cognitive psychology is the usefulness of interleaving the study of different subjects and of reencountering the same topics on different contexts.[36] This is a powerful argument for relating subjects in a well-organized curriculum and for extensively using previous knowledge and skills for studying different subjects. Reinterpreting and explaining, both verbally and in writing, improves student's knowledge. The same applies for quantitative, data-analysis, and logic skills: by using these skills in different contexts we simultaneously reinforce these skills and the substantive knowledge students are acquiring.

8.4.8 Preparing Teachers, Preparing the Future

In education studies there are few consensuses, but there is certainly one regarding the importance of teachers for the quality of the education.[37] Many studies and review studies have shown and highlighted the impact of teachers initial training on students short- and long-term educational success.[38]

In Portugal, teachers are experienced professionals, but this can change soon, as a large number of teachers is approaching retirement age. The latest published results show that at the elementary level (grades 1–4) there are 7.6 teachers who are 50 years of age or older for each teacher 35 years of age or younger. For middle and high school teachers (grades 5–12), the proportion is even more alarming: 14.6 to 1.

Contrary to some of the hype, the profession is still desired by young graduates: each time teaching positions are available, there are more candidates than places to fulfil. This sets the stage for strengthening the future of Portuguese education: to prepare, qualify, and select the best professionals.

We took three measures to improve initial teacher training.

– *Regulating access to teachers' colleges and education programs at universities.*

– When we took office, almost anyone with a high-school diploma could enter a teacher training program. Students could have failed their math courses; in all or in some grades during their 12 years of schooling, that they could still enter these

[35] Roediger et al. (2011) provide a summary of the host of potential benefits of practicing retrieving as a learning technique.

[36] See, e.g., Taylor and Rohrer (2010).

[37] See a comprehensive review in Hanushek and Rivkin (2006).

[38] See, e.g., Lee (2018), Hanushek et al. (2019) and the references therein.

college-level programs. At this later level, they could take only some basic math in teacher preparation classes. At the end, they would be qualified to teach elementary school (grades 1–4) and upper elementary (grades 5 and 6), where they would need to teach basic arithmetic, geometry and data analysis.

– We changed this by instituting the need to pass an elementary math test at the end of high school in order to enter a teacher's college.[39]

– Surprising, there was no reaction from students or the from civil society to this measure. Only some teachers' colleges and some teachers' associations opposed this requirement as they feared their enrollment would drop.
– *Extending requirements and adding subject content matter in teacher preparation programs.*
– Typically, students who want to become teachers, enroll in a preparatory first cycle of 3 years (roughly equivalent to an undergraduate program in the US) and graduate with a university degree in education. In order to fulfill teacher licensing requirements, students must continue their studies and obtain a master's that focuses on subject content and teaching methods and pedagogy. Master programs include courses in two areas: (i) general education, i.e., philosophy or sociology of education, history of education, psychology, pedagogy and didactics, (ii) subject matter content, i.e., sciences, mathematics, grammar, literature, and so on, according to the specialization they want to acquire.
– We introduced two directives: (1) increased the number of credits required in teaching programs, resulting in master's degrees of four semesters, rather than three, and (2) increased the number of credits in the subject-matter areas.[40] This way, teachers of English would have more English courses, teachers of Geography would have more Geography courses and so on.
– These measures went against a trend of increasing non-subject matter courses and decreasing the subject-matter required knowledge. Moreover, they addressed a shortcoming identified in data from exams of teacher candidates. These revealed a deficient preparation in subject matter knowledge.
– *To introduce an entrance exam for teacher candidates.*

– In the Portuguese system, teacher candidates applying to public schools are selected and placed at the national level by the national administration. Initial selection is based on graduation scores only. This provides the wrong incentives to teacher training schools, as they want to increase their enrollment and so they have pressure to increase students' graduation grades. This also provides the wrong incentives to students entering a teacher training program, since they must consider how to obtain the best grades upon graduation in order to get a teaching position.

[39] Portaria n.° 91/2014 de 23 de abril.

[40] Decreto-Lei n.° 92/2014 de 14 de maio.

– We then followed the lead of many countries and introduced a national screening exam for all prospective teachers without tenure and for all teachers with a temporary contract with less than 5 years teaching experience (akin to substitute teachers). The results of the exams were appalling,[41] as a high fraction of candidates could not answer basic reading, writing, and logic questions, neither they could they answer basic questions regarding the subject-areas they were trained to teach. Unfortunately, this measure was under great pressure to be abolished by some unions and some parties and was eventually abolished during the next legislative cycle. I still consider it a very important measure. Either it needs to be replaced by equivalent measures for selecting prospective teachers or it should be reinstituted.

8.5 Conclusion

As the twenty-first century began, educational news was not favorable to Portugal. International comparisons showed students lagging on major subjects. By 2015, the situation had changed, and many regarded Portugal as an example to follow. When we look back and see the major reforms done during these years, we recognize a movement towards attention to the results in basic subjects and towards better structuring the curriculum. During the period 2011–2015, which was analyzed in some detail here, this movement was reinforced. A major conclusion from the analysis of this period is that striving for the quality needed in the twenty-first century is a way to help progressing all students, especially those from disadvantaged backgrounds.

References

Centre for Education Statistics and Evaluation. (2017). How schools can improve literacy and numeracy performance and why it (still) matters. New South Wales Department of Education. https://www.cese.nsw.gov.au. Accessed 2 Oct 2019.

Crato, N. (2006). *O 'Eduquês' em Discurso Directo: Uma Crítica da Pedagogia Romântica e Construtivista.* Lisbon: Gradiva.

Crato, N. (2018). Everything starts with the curriculum. *ResearchED* 3. https://researched.org.uk/everything-starts-with-the-curriculum/. Accessed 20 Nov 2019.

[41] Numbers do not represent existing teachers training, but they are extremely worrisome regarding the knowledge of prospective teachers. On the general test of reading, writing, basic knowledge and logic, 34,1% of the candidates failed. On the subject matter exam, a large fraction of teacher's candidates that passed the general exam also failed. For high-school candidates failure rates were 42.3% for Biology and Geology, 63.2% for Physics and Chemistry, 60.4% for Portuguese. For elementary-school candidates failure rates attained 41.6% for Mathematics. Other areas, such as pre-schooling (1.3%) and Geography (2.0%) had much lower failure rates (Ministério de Educação e Ciência 2015).

Donnelly, K., Nagarajan, A., & Lipstein, R. L. (2019). *Beyond the mirage: How pragmatic stewardship could transform learning outcomes in international education systems*. http://seeingbeyondthemirage.com. Accessed 24 July 2019.

European Commission. (2016). *PISA 2015: EU performance and initial conclusions regarding education policies in Europe*.

Hanushek, E. A., & Rivkin, S. G. (2006). Teacher quality. In *Handbook of the economics of education* (Vol. 2, pp. 1052–1078). Amsterdam: North Holland.

Hanushek, E. A., Piopiunik, M., & Wiederhold, S. (2019). Do smarter teachers make smarter students?: International evidence on teacher cognitive skills and student performance. *Education Next, 2019*(Spring), 57–64.

Lee, S. W. (2018). Pulling back the curtain: Revealing the cumulative importance of high-performing, highly qualified teachers on Students' educational outcome. *Educational Evaluation and Policy Analysis, 40-3*, 359–381.

McDaniel, M. A., & Callender, A. A. (2008). Cognition, memory, and education. In H. L. Roediger (Ed.), *Cognitive psychology of memory, vol. 2 of learning and memory: A comprehensive reference* (pp. 819–844). Oxford: Elsevier.

Ministério de educação e Ciência. (2015). *Relatório de Aplicação da Prova de Avaliação de Conhecimentos e Capacidades no ano escolar 2014–2015*.

Morris, A. (2011). *Student standardized testing: Current practices in OECD countries and a literature review* (OECD Working paper series no. 65).

National Research Council. (2002). *Learning and understanding: Improving advanced study of Mathematics and Science in U.S. High Schools*. Washington, DC: The National Academies Press. https://doi.org/10.17226/10129. Assessed 3 Oct 2019.

NCTE, National Council of Teachers of English. (2014). How standardized tests shape–and limit–student learning, A policy research brief.

New South Wales Government Department of Education. (2017). *Education literacy and numeracy strategy 2017–2020*. https://education.nsw.gov.au. Assessed 20 Nov 2019.

OECD. (2016). *PISA 2015 results (Volume I): Excellence and equity in education* (p. 266). Paris: OECD Publishing. https://doi.org/10.1787/9789264266490-en. Accessed 10 Oct 2019.

OECD/UNESCO Institute for Statistics. (2003). *Literacy skills for the world of tomorrow: Further results from PISA 2000.* Paris: PISA/OECD Publishing, https://doi.org/10.1787/9789264102873-en. Assessed 20 Nov 2019.

Roediger, H. L., & Karpicke, J. D. (2006). Test-enhanced learning: Taking memory tests improves long-term retention. *Psychological Science, 17*, 249–255.

Roediger, H. L., Smith, M. A., & Putnam, A. L. (2011). Ten benefits of testing and their applications to educational practice. In B. H. Ross (Ed.), *Psychology of learning and motivation*. San Diego: Elsevier Academic Press.

Sanger, L. (2011). An example of educational anti-intellectualism, post of December 13, 2011. https://larrysanger.org/2011/12/an-example-of-educational-anti-intellectualism/. Accessed 3 Aug 2019.

Shifrer, D., Turley, R. L., & Heard, H. (2017). Do Teacher financial awards improve teacher retention and student achievement in an urban disadvantaged school district? *American Educational Research Journal 54*(6), 1117–1153. https://doi.org/10.3102/0002831217716540. Accessed 20 Nov 2019.

Taylor, K., & Rohrer, D. (2010). The effects of interleaved practice. *Applied Cognitive Psychology, 24*, 837–848.

UNESCO. (2017). Fact sheet no. 46.

Wayne, A. (2009). *Unequal by design: High-stakes testing and the standardization of inequality*. New York: Routledge.

Chapter 9
From the "Best-in-the World" Soviet School to a Modern Globally Competitive School System

Isak Froumin and Igor Remorenko

Abstract The dramatic story of moving from knowledge-based to competence-based education is the main focus of the chapter. This transition was very difficult because many people believed that the Soviet schools were best-in-the-world, because teachers and parents were not ready to change the schools. The paradigm change in Russian education has still heterogenic impact on schools, assessment system, education policy, curricula.

9.1 Introduction: Quarter Century of Major Transformations

The case of education reform in Russia (just as in all other post-socialist countries) is very complex and difficult to analyze insofar as it combines planned educational policies with the spontaneous adaption of the system to the tectonic social and economic transformations of post-socialist societies (Silova and Palandjian 2018). The post-Soviet transformation of Russian education since 1991 should be considered in the context of social, political, cultural and economic change. At each stage of this transformation, the following aspects of these contextual changes should be kept in mind (Ben-Peretz 2008; Silova and Palandjian 2018):

- Political – from a totalitarian one-party regime to democratic governance and rule of law; new federal-regional relationships
- Social – from forced equality to growing inequality

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- Cultural – from government censorship and atheism to a pluralistic culture and the active role of the Church
- Economic – from a planned economy to the free market

There is a general consensus that the transformation of education policy in post-Soviet Russia went through three major stages:

- 1991: Disappearance of Soviet ideological and centralized administrative control; borrowing curricular ideas and teaching approaches from the West; experimentation (Birzea 1994)
- 2000: Nationwide construction of new institutional mechanisms in education, including per-capita financing, public engagement, quality assurance (including a national school leaving exam), modernization of school infrastructure, and greater student choice
- 2012: Achieving global competitiveness in education while assuring the equality of educational opportunities by raising the status of teachers (including significant salary increases), continuing to develop quality control mechanisms, and introducing new curricular standards
- 2016: Conservative turn. Since this time, the new leadership of the Ministry of Education has striven to return national curriculum policy to the Soviet model. Using the idea of a "common education space for all schools," it initiated the revision of federal education standards to reduce the curricular autonomy of schools and teachers

There is a significant body of studies on the post-Soviet education transformation of 1991–2000. This period is often called the "policy of no policy" – it was a time of adaptation rather than targeted reform. Every region and almost every municipality elaborated its own education policy and strategy, often without any link to the federal government. As a rule, these policies were driven by factors external to education – primarily economic, social and technological changes. In this chapter, we shall consider the period from 2000 on.

Many researchers have studied financial and organizational reforms (The World Bank 2019; Cerych 1997). Therefore, we shall focus here on changes in teaching- and learning-related areas (curriculum, assessment, textbooks, technology, teacher training) within the education system. The specific focus of our analysis leads us to the conclusion that the reforms paid little attention to the true nature of teaching and learning and therefore did not fulfill their transformative potential.

Our analysis is based on personal experience,[1] data from various sources, an analysis of literature, and 12 interviews with former and current education policymakers in Russia.

[1] One of the authors (Isak Froumin) was a senior member of the World Bank team in Moscow that provided support for Russian education reform (from 1999 to 2015); the other (Igor Remorenko) was a senior official at the Russian Ministry of Education (from 2004 to 2013), holding, in particular, the position of Deputy Minister (from 2011).

9.2 Post-Socialist Education System as the Result of Path Dependence, Modernization and Global Integration

This chapter includes a discussion of the specific context of the transformation, which makes the Russian case very particular. One of the largest education systems in the world had to modernize itself, move away from a socialist institutional organization, and enter the global education scene. The approach of this chapter is based on the simultaneous analysis of three processes:

- Transformation (abandonment or strengthening) of the post-Soviet educational legacy that derives from socialist education
- Modernization (introduction of new elements and processes) of education, reflecting changes in the economic, political and social context within the country
- Changes in education that reflect global processes in which Russia is participating

These processes could contradict or reinforce each other at different times. In addition, each had its own logic and interest groups.

9.2.1 Soviet Legacy

The early Soviet school was characterized by three distinct features: forced equalization and a preference for previously disadvantaged groups; communist ideological education (upbringing) in the absence of traditional religion-based values; and an innovative curriculum that aimed to connect school and "real life" (labor). The Bolsheviks initially rejected the "old school rules" inherited from Continental European traditions.

Attempts to assure a broader and more equal access to education led not only to structural changes and organizational expansion but also to very important policies on curriculum and teaching. First, the idea of cultural capital (even the Bolsheviks were not familiar with this term) served as a basis for the policy of early childhood development within the extensive public system of pre-school education. This system helped children from formerly underprivileged groups to prepare for school. Secondly, the idea of equality led to the practice of uniform requirements for student knowledge and teacher qualifications. Thirdly, the equalization policy included affirmative action and special curriculum options to support girls, children from rural families, and children from poor families (Bereday 1960).

These approaches evolved during the Soviet era, existing until its very end. The rigid uniformity manifested itself in the compulsory detailed curriculum that was followed by every Soviet school. Daily tasks, exams and textbooks were universally enforced in 11 time zones. Attempts to increase the variability of curricula in high school resulted in 1% of high-school students attending schools with in-depth curricula in math, science or foreign language (Bereday and Pennar 1976).

Soviet education was extremely politicized from the very beginning. Every teacher and parent learned Lenin's famous maxim: "School without politics is nothing but lie and hypocrisy." Therefore, political and ideological education was part of the Russian education system. The Marxist theory of education rejected religion as an element of human moral and social development and did not consider the family to be an important partner in children's upbringing. The public school was considered the only actor in this process. Political indoctrination included teaching ideologically biased school subjects (history, social studies, literature, geography and science) and mandatory extracurricular activities in communist youth organizations (Long 1984; Judge 1975). The system exerted ideological control over every aspect of school life, including political rituals. It is important to note that this politicized education also attempted to inculcate morality and social skills and assist in career development. Soviet authorities established a unique system of publicly funded after-school education, including sport clubs, art and music lessons, etc. More than 70% of students participated in different activities within this system (Holmes et al. 1995).

During the post-Revolutionary period of the 1920s (Kerr 1997), the People's Commissariat for Education developed a strategy aimed at promoting a comprehensive labor-centered educational model. This largely resonated with the imperative of creating a new socialist generation as an indispensable foundation for building a totally new society. This policy was also associated with substantive changes in educational design and the instructional framework itself. For example, students were expected to participate primarily in practice-oriented project-based learning rather than conventional "drill and repetition" activities. Accordingly, the teacher was also assigned the new role of a facilitator who tried to motivate and engage children in this kind of schooling. As a result, new institutions for experimental education began to be established in large numbers across the Soviet Union at the time. In Moscow alone, there were eight schools that entered into close cooperation with the U.S. psychologist and innovative educator John Dewey and his followers. On the whole, the pedagogical principles of comprehensive, labor-centered learning and development experienced a marked upswing in the USSR during the 1920s. As John Dewey himself noted when reflecting on early Soviet Russia, the country's post-Revolutionary schooling came to favor pedagogical novelty and experimentation of various kinds, which would definitely not have been possible in Russia's imperial past. It should be noted that this new pedagogical framework put special emphasis on such aspects as interacting with students' families, promoting after-school study (after-school activities, summer camps, etc.), and introducing new models of collective work and study (Dewey 1928).

Despite the fact that ideological propaganda and the forced inculcation of communist values became deeply entrenched in Soviet education, it must be recognized that the creative legacy accumulated by Russian pedagogy during the 1920s – primarily the experience of project-based schooling – proved useful and beneficial. We should mention the inception of Lev Vygotsky's cultural-historical approach in this context, as the essential groundwork and first practical applications of this framework date to the 1920s. However, as the country entered the industrial era of the

1930s, the momentum of pedagogical creativity and experimentation dwindled, and Soviet education largely returned to more rigid models. The connection with "real life" was achieved not through project methods but through a detailed curriculum with a strong emphasis on science, mathematics, and engineering and the early separation of students into academic and vocational/technical tracks. These changes were accompanied by a major expansion of the higher education system that influenced the expectations of students and families.

In the late 1950s and 1960s, after the end of Joseph Stalin's regime, attempts were made to reform the "industrial school model" yet proved unsuccessful. A group of psychologists and philosophers proposed an "activity-based approach" grounded in Vygotsky's ideas of the social situation of the zone of proximal development. It was directly connected with the concept of high-level generic skills (one of the manifestos of this approach was "Schools must teach children to think") (Ilyenkov 1964). The Academy of Pedagogical Sciences established a number of experimental schools in different parts of the Soviet Union. Teachers got new textbooks, and numerous training and retraining courses were developed. This approach got attention worldwide (Simon and Dougherty 2014).

Still, the innovations in curricula and teaching that were introduced in the 1960s and 1970s came to play a significant and sustained role in the overall development of Soviet schooling. A good example is the practice that emerged among school teachers of complementing their standard daily lesson plans with tasks aimed at developing students' critical thinking skills and personal traits. Furthermore, supervisors began to monitor how such skills were developed both in the classroom and during extracurricular activities offered at each school. Students at different levels of education were expected to display a solid knowledge of ethical principles and codes of conduct. They were encouraged to prepare personal growth plans and work persistently and independently to become honest, responsible, considerate and hardworking Soviet citizens (Dunstan and Suddaby 1992).

9.2.2 Early Post-Soviet Period: Innovation and Adaptation

The period between the late 1980s and the late 1990s witnessed a mass revival of interest in educational innovation in three areas: the rejection of the Soviet legacy; the modernization of curricula and the reform of the system to respond to the changing needs of Russian society; and opening education to globalization (Collier 2011; Bolotov and Lenskaya 1997). We should note that this interest was an even stronger driving force of change than government policy. The only real policy at that time was to give more freedom to different stakeholders.

During this period, there appeared a large number of experimental schools where a new generation of innovative educators adopted and built upon the ideas of developmental learning in order to nurture different student qualities and abilities similar to what we call "21st-century skills" today. Among the novel frameworks that enjoyed the greatest popularity among teaching professionals during this period

were "humanistic pedagogy" and the ideas of "collective learning." This led to the creation of a nationwide movement of innovative teachers and educators, whose "Manifesto for the Pedagogy of Cooperation" summarized their common goals and the key curricular and instructional approaches of innovative schooling. This document stressed such pivotal principles as promoting cooperation between teachers, students and parents; all-around personal and professional development; and self-governance (Eklof and Dneprov 1993). As the national teacher community started to participate in global educational networking, a growing number of overseas educators began to come to Russian universities, teacher associations, and other organizations to talk about international innovative experiences in learning and development. This led to the growing popularity in Russian schools of pedagogical ideas and approaches advanced by Maria Montessori, Rudolf Steiner, and Célestin Freinet, among others.

It should be noted that, during the period in question, educational innovations began to get more recognition and support from various public and state institutions in Russia. This was evidenced by multiple facts, including the increasing appointment of innovative teachers to major positions at different governmental levels, their growing interaction with professional development organizations and universities for sharing their views and disseminating novel practices in education development, and the growing focus of academia and policy agencies on exploring and discussing the ideas of innovative teachers (Eklof and Seregny 2005). During the same period, Russian central authorities vested regional bodies with the right to make and administer education development policies at their own discretion. As a rule, these policies varied significantly between regions, reflecting the different conceptions of and approaches to innovative education across Russia (Webber 2000; Johnson 1997).

With time, the public movement of educational innovators started to lose ground, however. This was due to several different reasons. First of all, despite the substantial experience accumulated by progressive teachers in Russia and their efforts to disseminate various novel practices, the institutional and regulatory foundations of the national education system remained basically intact and were unable to provide the necessary conditions for fostering innovative development. For example, statutory education standards retained their traditional content and structure, in which the conventional principles of drill, repetition and knowledge reproduction were emphasized (Kerr 1994). In addition, many of the proposed pedagogical innovations lacked the necessary financial support for being effectively implemented at a large scale. Secondly, no substantial changes had been made to the national system for teacher training and professional development. Nevertheless, despite these factors that precluded any systemic deployment of innovative practices in the educational sphere, positive changes took place during this period. They included increased levels of autonomy and flexibility in designing curricula and teaching at both regional and institutional levels (e.g., school- and regional-level components were introduced into curricula; schools were allowed to complement the mandatory core curriculum with extra disciplines to adapt the content of education to changing socioeconomic needs and stakeholder expectations; etc.) (Sutherland 1999; Jones 1994).

In the meantime, Russia sank into the prolonged and disastrous disarray of the 1990s. This included a series of painful trial-and-error economic reforms, the lack of a robust legal system, the misappropriation and redistribution of industrial assets, severe delays in salary payments, and an escalating crime rate. These events were further exacerbated by the 1998 sovereign default and its dramatic aftermath of hyperinflation and shrinking disposable incomes. These pernicious circumstances called for major remedies to rectify the deep economic downswing. This time was also characterized by drastic changes in every domain of social life, as the country transitioned to the new market-driven economy (Khrushcheva 2000).

As the 1990s drew to a close, the Russian education system was confronted with a series of severe problems and constraints at different levels, including curtailed public funding; deteriorating facilities and outdated equipment; a lack of qualified young teachers and the falling prestige of the teaching profession; and non-transparent and often corrupt systems for evaluating education quality. There was a pressing need for a new, systemic approach to national education (Reform of the System of Education 2002).

9.3 Return of the State to Policy Development and Implementation

The onset of systems transformations in the Russian education system dates back to December 2001, when the Russian government adopted the "Concept for Modernizing Russian Education through 2010." This enactment was the first to include imperatives related to the so-called "competency-based approach" that called for the development of a holistic, up-to-date set of relevant skills and abilities in schools. However, even a cursory glance at the list of adopted measures shows that policymakers had no intention at that stage to amend the national education standards already in place. At the time, policy discussions were largely confined to such topics as shifting from a K–11 to a K–12 schooling model, simplifying curricula, expanding the list of elective courses, and increasing the number of hours of physical education. There was no explicit focus on the 21st-century skills agenda.

In the spring of 2004, only days before the incumbent Russian Minister of Education was dismissed as part of an ongoing administrative reform, the new state education standards were approved. They included provisions for "… shaping education in such a way as not only to provide students with certain bodies of specific disciplinary knowledge but also to ensure the comprehensive development of their personality traits and multifaceted cognitive and creative abilities." In addition, references were made in this document to the objectives of inculcating up-to-date competencies and skills in children, echoing the provisions of the "Concept for Modernizing Russian Education through 2010" (Concept for Modernisation 2010): "General schooling must be able to inculcate a cohesive system of universal core literacies, skills and abilities, as well as to nurture in children a sound capacity to exercise adequate degrees of autonomy and self-direction, to take personal

responsibility, etc., i.e., those competencies that reflect modern standards for the content and quality of education." However, the new standards also did not try to list or describe any of the specific competencies and skills to which they referred, only setting out basic learning outcomes for every curriculum subject to be evaluated throughout the general schooling ladder in elementary, middle and high school. It should be noted that the wording of some learning outcomes already implies the pragmatically oriented, goal-centered educational focus adopted in this document. For example: "[students must be able:] to adequately comprehend live speech by adults and peers, children's radio broadcasts, audio recordings of different types, etc.; to work with a dictionary; to produce short coherent texts on topics relevant to their age, both orally and in writing; to display the mastery of generally accepted Russian conversational patterns as relevant to different contexts of basic daily communication…" While these attempts to harmonize the regulatory framework with the imperatives of competency-based training for "real life" represented a real step forward in state education policy, the document nevertheless failed to relate any subject-specific learning and development (L&D) outcomes to the framework of universal core competencies and skills of the 21st century. Similarly, the 2004 secondary education standards still mostly focused on simply establishing "basic core curricula" or detailed lists of study topics for every subject and stage of the education ladder. Thus, if we take a look at any 2004 standard, whether in literature, history, or physics, we will only find detailed itemized lists of specific thematic areas and questions to be addressed during the course (e.g., book titles, historical events, natural phenomena). This hardly dovetails with modern effective curriculum and instructional design (Silova 2009).

However, in late 2004 the national government took steps to update learning and development in education policy by adopting the "Priority Development Areas for the Russian Education System." Subsequently, a comprehensive action plan for implementing the provisions was elaborated in the spring of 2005. These measures represented a more transparent policy intention to systematically revise the education standards in place in order to enable a more up-to-date framework based on well-defined L&D objectives and outcomes. It was proposed at this stage that conventional lists of study topics by subject area should be eliminated from education standards altogether. However, such innovative shifts took place in a rather slow and uneven fashion, as the Russian government had not yet understood how to transition to 21st-century competency-based pedagogical principles (Concept for National Standards 2005).

In 2005, the priority national project "Education" initiated by Russian President Vladimir Putin established a system of grants to support the country's best teachers and innovative schools. This suggested the state had decided to stake the successful implementation of further education reforms on the practical experience and vision of a national corps of progressive teachers.

On September 13, 2007, during the discussion of the priority national project "Education" at the Federation Council, the Russian President called for measures to be taken to design and deploy "… a new model of education that would effectively address the target of the sustained innovative development of the national economy

and that would, in particular, be based on totally new statutory education standards as its regulatory core, creating the conditions for students to acquire adequate knowledge and the relevant skills allowing them to put this knowledge to effective practical use." The presidential appeal prompted the policy framework to accord more attention to the conceptual domain of 21st-century skills, while also heralding yet another turnaround in the standardization of national education.

The year 2008 witnessed a series of legislative amendments and the revision of Russian national education standards. An important novelty was the inclusion in the standards of so-called "meta-discipline learning outcomes" deriving from a more or less explicit competency-centered learning and development model. Structurally, the approach of the new standards to framing learning outcomes closely resonated with the groundwork of the 21st-century skills agenda: both distinguished between the following three groups of outcomes: subject outcomes (functional literacy, knowledge and understanding), meta-discipline outcomes (competencies), and personal outcomes (values and mindsets) (Silova 2010).

In 2009–2010, the new Russian federal education standards (FES) were drafted and pilot-tested with the participation of multiple stakeholders at different levels, including policy officials, experts from the Russian Academy of Education, providers of upskilling/reskilling programs, and universities. In the course of FES development, project team members engaged in fieldwork across Russian regions, where they held seminars on FES documents and feedback sessions. Public reactions and proposals were then forwarded for further discussion to the FES Council at the Russian Ministry of Education and Science. However, a major shortcoming of this method was the fact that the aforementioned corps of national education progressives represented by the most resourceful teachers at innovative schools was hardly involved at all in public discussions on the proposed FES. The failure of the agencies implementing the FES project to organize the drafting and pilot-testing process in a cohesive and transparent manner made it impossible for many representatives of the innovative teaching community to contribute to the project in a meaningful way. For example, venues for FES discussions were mostly chosen by local state authorities at their sole discretion, often without due consideration for the interests and requirements of other stakeholders; little reference was made to innovative school experiences when explaining and validating the new FES; and expert councils for the project were created at the federal level only. University professors and specialists in individual disciplines had the strongest voice in these councils, while teachers and parents were not properly represented. As a result, the standards were written in a very formal and academic language that alienated teachers (Silova 2011).

Nevertheless, the aforementioned shortcomings and inconsistencies notwithstanding, the Russian Education and Science Ministry completed in 2010–2012 the drafting and approval of the new FES package for K–11 education with separate regulations for each stage of learning and development, including preschool and elementary, middle, and high school. All of the FES followed the educational paradigm of 21st-century skills, as they specified not only learning outcomes for individual disciplines but also included expected meta-subject competencies and personality development outcomes for students at every stage of learning and development.

It should be noted that, during the transition to the new FES framework, Russian school teachers were left to their own resources to decide on how the new imperative of inculcating 21st-century skills should be actualized in their classrooms. To enable a smoother transition to the new FES, a number of continuing education opportunities were offered to teachers across Russia, including methodological seminars, best-practice workshops, and upskilling courses. It was also decided to develop model study programs based on the new FES as practical guidelines for individual teachers and schools in elaborating their own curricula and class schedules in accordance with the FES (in 2010–2014, such model programs were developed for every stage of K–11 education).

At the same time, it was assumed that the secondary schools themselves would be able to reconfigure and harmonize their systems for monitoring and evaluating the conformity of learning outcomes to the new imperatives of competency-centered learning and development. The centralized state assessment of student performance under the new FES framework was only planned for 2020 and 2022 (given that the first-graders of 2011, which was the first year of schooling under the new FES, would take their K–9 and K–11 state exams in 2020 and 2022, respectively).

9.4 Reform and New Understanding of Learning Outcomes

As we mentioned above, the curricular standards included three groups of outcomes: subject outcomes (discipline-specific; functional literacy, knowledge and understanding), meta-subject (meta-discipline) outcomes (competencies), and personal outcomes (values and mindsets). The first two groups covered cognitive development, while the third group addressed social and emotional development.

The following examples illustrate the differences between these groups.

For example, subject outcomes in mathematics were described as follows:

1. Use of basic knowledge in mathematics for describing and explaining surrounding objects, processes, and phenomena and evaluating their quantitative and spatial relationships
2. Mastering the fundamentals of logical and algorithmic thinking for spatial imagination and mathematical recording, measurement, and calculation and executing algorithms
3. Ability to operate with numbers orally and in writing, ability to perform textual tasks and use algorithms, develop simple algorithms, research, recognize and draw geometrical figures, work with tables, graphs, diagrams, chains and aggregates, and present, analyze and interpret data

These descriptions show a certain degree of orientation on the application of theoretical knowledge to practical situations, even though the statements are too general and do not help teachers to plan their work. In later versions of the standards, the descriptions became more detailed and specific. Still, they continued to be oriented on subject knowledge and had little to do with 21st-century skills.

Here are some examples of metacognitive learning outcomes:

1. Developing the ability to select and pursue educational aims and objectives, finding the proper means for their implementation
2. Developing the ability to solve creative and research problems
3. Developing the ability to plan, control and evaluate learning activities from the standpoint of the task and the conditions of its implementation and to find the most effective means to attain the result

As these descriptions of outcomes show, many were related to 21st-century skills, even if most of them were formulated as processes rather than outcomes. Moreover, the authors of the standards failed to explain how metacognitive outcomes were to be addressed in school subjects. Some teachers believed these outcomes should not be targeted in their work because they were not formally assessed.

Below are some descriptions of personal learning outcomes:

1. Developing Russian civic identity, taking pride in one's motherland, the Russian people and Russian history, recognizing one's ethnic and national identity; developing the values of multinational Russian society; developing humanistic democratic values
2. Developing a respect for the opinions of others and the history and culture of other ethnic groups
3. Taking personal responsibility for one's actions, based on values, norms, and social justice and freedom
4. Developing cooperation skills with adults and peers in different social situations and the ability to avoid conflicts and resolve disputes

This language was not clear for teachers. Moreover, it was not entirely clear how these results could be attained in school. At the same time, the standards stated that personal outcomes were not assessed.

The authors of the standards tried to present the aims and objectives of the standards in language which would be comprehensible to ordinary citizens. To this end, they introduced a special section called "primary school student profile." It indicated that primary school graduates

- Love their people, region and motherland
- Respect and accept values of family and society
- Actively learn about the environment
- Learn and organize their own activities
- Act independently and take responsibility for their actions
- Have a friendly attitude, listen to and understand their interlocutors, and are able to present their views and opinions
- Follow the rules of a safe and healthy way of life

As the above statements show, the authors of the standards tried to assuage society by emphasizing the absence of risks in the reforms. They focused on the most popular and traditional mindsets: patriotism, goodwill, a healthy life style, and family values. As a result, they presented the abilities to think critically, cooperate, solve

problems, and communicate effectively in a less clear way. They tried to balance the new learning outcomes with a "know everything" approach (Muckle 2003).

The resulting curriculum included some elements contributing to the development of 21st-century skills. However, the content and procedures of the assessment system changed very little, which became the main hindrance to the development of these skills.

Some aspects of the reforms supported the development of 21st-century skills, while others were neutral. We will briefly describe these two groups of elements.

The first group of elements contributing to the development of 21st-century skills included

1. Per capita financing and school autonomy. It was expected that the uniform distribution of financial resources among schools in proportion to the number of students would stimulate the renewal of the content of education and that financial freedom would give teachers greater autonomy in developing their own curricular programs. In turn, teachers would be more responsible and independent in selecting the methods of attaining new learning outcomes, including metadiscipline and personal outcomes. Many schools reflected these outcomes in their curriculum. The budgets of schools began to depend on the number of students. As a result, some schools tried to develop new courses to attract more students.
2. Teacher development programs were selected on the basis of teacher needs. Previously, only special teacher in-service training institutions had provided teacher training programs, yet their programs were of low quality. Now, these institutions had to compete with universities and other non-commercial organizations, as individual teachers independently sought professional development opportunities to get acquainted with the new standards. The number of in-service training courses aimed at the development of 21st-century skills has grown since 2012.
3. The appearance of internet in schools allowed teachers to look for new materials, meet new colleagues, and participate in different professional networks online. New communities of practitioners stimulated teachers to search for new teaching solutions. Many teaching materials supporting the development of 21st-century skills were adapted from foreign resources and non-commercial organizations.
4. The new curriculum allowed schools to offer more elective courses to students. This innovation played a dual role in the development of 21st-century skills. Some schools gave students more opportunities to select their study tracks, teaching them to make conscious choices, solve problems, and cooperate. Schools transformed traditional courses and subjects and gave students a new choice of courses. These changes were connected with the 21st-century skills approach.

Aspects of the reform that hindered the introduction of the new standards included:

1. Expanding the curriculum by introducing new subjects, such as "fundamentals of religious cultures" and astronomy. While a lot of resources were invested to introduce these subjects, their content was based primarily on memorization. The same was true of the renewed concepts of teaching history and literature. They were also oriented at the memorization of information and historical facts and reading books from the recommended list.
2. Russia was still developing its quality control system. Despite the growing number of monitoring and review measures, the instruments remained focused on knowledge control, hindering the orientation of teachers at the development of 21st-century skills.

9.5 Reform Implementation

The implementation stages reflect the stages of the reform.

2001–2004. This stage was more about reform design and discussion rather than reform implementation. Implementation was limited to experimental schools, pilot municipalities and pilot regions. Many schools experimented with their new curricular freedom. They introduced new courses and project-based lessons. Many local publishers also took advantage of the relatively flexible requirements for textbooks and experimented with new contents and formats of learning materials. However, these innovative practices were not supported by analysis and evaluation. Good practices could not be disseminated without such evaluation and horizontal cooperation between teachers and schools. The regional and federal governments did nothing to support and diffuse the best practices.

Some innovations such as the national school leaving/university entrance exam (Unified State Exam) and per capita financing were pilot-tested in several regions prior to their mass introduction nationwide.

2004–2005. During these 2 years, the Russian government established a new system to implement its education policy agenda, including a totally new Russian Ministry of Education and Science along with a Federal Agency for Education, a Federal Agency for Science, and a Federal Service for Education Quality Monitoring. The underlying idea was that a closer integration of the domains of education and research would enable more meaningful, high-payoff reforms that would be better tailored to address all the top-priority development areas. However, the changes at the federal level did not transform the very nature of top-down reform. Nor did they have any significant impact at the regional, municipal and school levels. They increased top-down control in reform implementation without promoting the energy and initiative of lower levels.

2005–2011. The project approach of reform implementation was pilot-tested during this period. In the fall of 2005, the Russian President launched the strategic national project "Education," accompanied by a series of similar nationwide initiatives in healthcare, construction and agriculture. The "Education" project framework envisaged the following the key measures:

- Paying personal awards of RUB 100,000 annually to the 10,000 best Russian teachers
- Allocating grants of RUB 1 million annually to 1000 innovative schools
- Regular top-up payments to homeroom teachers (reflecting their extra duties of class supervision, the organization of learning and development extracurricular activities, etc.)
- One-off modernization projects addressing specific aspects of education in individual regions (any financial surpluses achieved through such structural reforms were typically used to fund teacher pay raises in the regions)

This period showed that the centralized system of policy implementation could work only with relatively simple project objectives. This partially explains why the government could not really implement the curriculum reform.

2011–2016. The adoption of the new federal law "On Education" was the central element of reform implementation during this period. The new law provided a favorable regulatory framework for the mass-implementation of new education policies piloted in previous years. It also included the universal implementation of new progressive federal education standards. The mass-deployment of FES also envisaged that the regions themselves would play a major role in facilitating effective teacher transition to the new standards; however, much of this work was impeded by its uneven and intermittent implementation.

2016–2018. During this period, the Russian Ministry of Education and Science underwent a series of administrative changes which, in turn, led to a readjustment of the overall action plan and key priorities in implementing the agenda of 21st-century skills and competencies in the Russian education sphere. Specifically, the newly appointed ministerial executives cast doubt on whether previous policy steps in upgrading the national education standards had in fact been reasonable and justified. Acting under the premise that "the formation of adequate bodies of knowledge should always precede – and serve as a basis for – the process of inculcating individual skills and competencies in students," the newly formed Ministry initiated yet another massive revision of federal education standards, spawning a vigorous debate in society One of the reasons for such doubt was disappointment of significant part of society with the fact that students don't remember key facts of Russian history and cultural heritage. In the spring of 2018, the Russian government reorganized the Ministry of Education and Science, creating two separate bodies in charge of secondary education (the Russian Ministry of Education) and tertiary education and science (the Russian Ministry of Science and Higher Education), respectively. In conclusion, we should stress that the dilemma of whether Russian education should more actively effectuate a transition to a competency-centered framework or, on the contrary, prioritize traditional disciplinary knowledge in national schooling has been receiving increasing attention in Russia recently.

9.6 Reform Politics and Main Results

On the whole, one can see a consistent logic in how the Russian government proceeded to reform the sphere of national secondary general education. A holistic conception of a general action plan was first elaborated and then followed by all-around public discussions and the gradual implementation of its individual elements. Looking back at how education reform was implemented in Russia, one can identify the following key factors and considerations facilitating these innovative processes:

- It was assumed from the very outset that the reform process would be primarily driven by the country's educational progressives. A lot of resources were invested in refining and pilot-testing the proposed learning and development innovations. The strategic national project "Education" provided a grant support framework for the best teachers, innovative schools and regional education reform initiatives, promoting the accumulation of a sound social asset of educational leaders and justifying the imperative to shift to competency-centered pedagogy. Moreover, a number of models of innovative schooling and individual innovations in educational design and instruction have become widely acknowledged and received increasing popular support.
- Russia became actively involved in a range of global education competitions and evaluation initiatives, including WorldSkills, PISA, TIMSS, PIRLS, and ICILS. Moreover, a number of national and subnational programs in education monitoring and testing were introduced in elementary and secondary schools. Evidence drawn from such assessments and benchmarking frameworks served to substantiate the goals and socioeconomic rationale of upgrading the standards of Russian schooling, as researchers finally got access to reliable cross-national data that could serve as a basis for substantiated judgments on the validity and appropriateness of specific learning and development approaches, models, and policy action.
- An example of the positive impact of education policy is the growing PISA math scores of Russian schoolchildren. In 2000, Russia's score was much lower than the OECD average. In 2003, Russia's results declined. In 2006, the mean OECD score fell, while Russia improved its performance, narrowing the gap. In the next 2012 wave, Russia's performance grew substantially. Finally, in 2015 Russia's score surpassed the OECD average for the first time. We should note that, although the mean score of OECD countries fell in 2015 in comparison with the 2012 wave, the 2015 results of Russian schoolchildren were comparable with OECD mean scores in 2006, 2009 and 2012.
- Beginning in the late 2000s, improvements started to be felt in the regulatory domain of Russian education as greater levels of transparency, trust, and accountability were achieved with the onset of massive public discussions of different proposed policies (in particular, through the institution of public councils, crowdsourcing techniques, etc.). Authorities organizing such public events were appointed on a regional basis across Russia, and the main results of public

discussions began to be disclosed and disseminated through seminars, web sessions, and stakeholder conferences. For example, over 100,000 people took part in discussions about the structure and content of model subject programs under the new competency-centered FES. Ongoing close public focus on the proposed regulatory initiatives in education has facilitated robust critique and multifaceted stakeholder feedback, leading policymakers to revise and expand their initial policy recommendations.

Alongside these positive factors, the reform process has had a number of major shortcomings and limitations:

- A major drawback of the reform of Russian schooling was the fact that most of the work on drafting the new FES and related methodological guidelines was performed by institutes of the Russian Academy of Education – a highly reputable academic organization that, nonetheless, failed to engage a sufficient number of education practitioners in the process. As a result, the language of the FES documents was overloaded with technical terminology barely comprehensible to many teachers. Furthermore, the abstruse and intimidating academic language of the new FES framework prevented non-specialists from making a more meaningful contribution to discussions and proposed amendments to the FES. At the same time, few business stakeholders participated in the reform process, making it impossible to bridge the widening gap between the quality of schooling and labor expectations.
- The global financial crisis of 2008 heavily affected the Russian economic landscape, leading the government to cut spending on modernizing education for several years. A number of major innovative initiatives had to be downscaled or scrapped altogether as a result. Consequently, the funding of education reforms in Russia became misbalanced. For example, while significant funding was allocated to less important areas (e.g., the new elementary school curricular program "Fundamentals of Religious Culture and Secular Ethics" was launched in 2010–2011, incurring much greater costs than the new FES), such crucial initiatives as purchasing modern equipment, training teachers, and holding stakeholder conferences and seminars remained vastly underfinanced.
- While transitioning to the learning and development framework of 21st-century skills, Russian education authorities pursued reform ambitions in a wide range of other areas, including devising new models of cooperation between businesses and professional education organizations, boosting university research, and developing new approaches to the guardianship of orphaned children and children's summer recreation and healthcare. Confronted with these multiple priorities, the Russian Ministry of Education and Science simply lacked the resources required to develop the reform agenda in secondary schooling more thoroughly.
- The number of public organizations and other stakeholders favoring a return to the conventional knowledge-centered paradigm patterned after the fundamental model of Soviet schooling has increased considerably in recent years, impeding a more streamlined transition to 21st-century pedagogy.

The ongoing reforms have not been accompanied by any rigorous evaluation of their impact. However, local and international studies provide evidence that the overall quality of school education has improved, inequality has been reduced, and general public satisfaction with education has increased. Further studies are needed to evaluate the impact of these changes more deeply.

References

Ben-Peretz, M. (2008). *The life cycle of reform in education: From the circumstances of birth to stages of decline*. London: Institute of Education-University of London.

Bereday, G. (1960). *The changing soviet school*. Boston: Houghton Mifflin Company.

Bereday, G., & Pennar, J. (1976). *The politics of soviet education*. Westport: Greenwood Press.

Birzea, C. (1994). *Educational policies of the countries in transition*. Strasbourg: Council of Europe.

Bolotov, V., & Lenskaya, E. (1997). *The reform of education in new Russia: A background report for the OECD review of Russian education. OECD Thematic Review of Tertiary Education*. Moscow: OECD.

Cerych, L. (1997). Educational reforms in central and Eastern Europe: Processes and outcomes. *European Journal of Education, 32*(1), 75–97.

Collier, S. (2011). *Post-soviet social: Neoliberalism, social modernity, biopolitics*. Princeton: Princeton University Press.

Concept for Modernisation. (2010). Concept for Modernisation of Russian Education. Policy Statement by the Government of the Russian Federation. [Electronic] Available from www.mon.gov.ru. Accessed 10 June 2013, p 256.

Concept for National Standards. (2005). Concept of Federal State Educational Standards for Secondary Education. Policy Document by the Government of the Russian Federation. [Electronic] Available from http://standart.edu.ru/catalog.aspx?CatalogId=261. Accessed 20 Sept 2008.

Dewey, J. (1928). *Impressions from revolutionary world*. New York: New Republic.

Dunstan, J. (1994). Clever children and curriculum reform: The progress of differentiation in Soviet and Russian state schooling. In A. Jones (Ed.), *Education and Society in the new Russia* (pp. 75–103). M.E. Sharpe: Armonk.

Dunstan, J., & Suddaby, A. (1992). The progressive tradition in soviet schooling to 1988. In J. Dunstan (Ed.), *Soviet education under perestroika* (pp. 1–13). London: Routledge.

Eklof, B., & Dneprov, E. (1993). *Democracy in the Russian school: The reform movement in education since 1984*. Boulder: Westview Press.

Eklof, B., & Seregny, S. (2005). Teachers in Russia: State, community and profession. In B. Eklof, L. Holmes, & V. Kaplan (Eds.), *Educational reform in Post-Soviet Russia* (pp. 197–220). London: Cass.

Holmes, B., Read, G., & Voskresenskaya, N. (1995). *Russian education: Tradition and transition*. New York: Garland Publications.

Ilyenkov, E. V. (1964). On the aesthetic nature of phantasy. *Issues of Aesthetics, 6*, 25–42. Moscow: Panorama annual.

Johnson, M. (1997). Visionary hopes and technocratic fallacies in Russian education. *Comparative Education Review, 41*(2), 219–225.

Jones, A. (Ed.). (1994). *Education and Society in the new Russia*. Armonk: M.E. Sharpe.

Judge, J. (1975). Education in the USSR: Russian or Soviet? *Comparative Education, 11*(2), 127–136.

Kerr, S. (1994). Diversification in Russian education. In A. Jones (Ed.), *Education and Society in the new Russia* (pp. 47–75). Armonk: M.E. Sharpe.

Kerr, S. (1997). *Why Vygotsky? The role of theoretical psychology in Russian education reform*. [Electronic] Available from http://webpages.charter.net/schmolze1/vygotsky/kerr.htm Accessed 10 June 2013.
Khrushcheva, N. (2000). *Cultural contradictions of post-communism: Why liberal reforms did not succeed in Russia*. New York: Council on Foreign Relations.
Long, D. (1984). Soviet education and the development of communist ethics. *Phi Delta Kappan, 65*(7), 469–472.
Muckle, J. (2003). Russian concept of patriotism and their reflection in the education system today. *Tertium comparationis, 9*(1), 7–14.
Puzankov, D. Ensuring the Quality of Higher Education: Russia's Experience in the International Context. *Russian Education & Society*, *45*(2), 69–88.
Reform of the System of Education. (2002). What we are losing (2002). Transcript of a round table. *Russian Education & Society, 44*(5), 5–31.
Silova, I. (2009). Varieties of educational transformation: The post-socialist states of central/Southeastern Europe and the former Soviet Union. In R. Cowen & R. Kazamias (Eds.), *International handbook of comparative education* (Vol. 22, pp. 295–331). Dordrecht: Springer.
Silova, I. (2010). Rediscovering post-socialism in comparative education. In I. Silova (Ed.), *Post-socialism is not dead: (Re)-reading the global in comparative education* (pp. 1–24). Bingley: Emerald Group Publishing.
Silova, I. (Ed.). (2011). *Post-socialism is not dead: (Re)-reading the global in comparative education*. Bingley: Emerald Group Publishing.
Silova, I., & Palandjian, G. (2018). Soviet empire, childhood, and education. *Revista Española de Educación Comparada, 31*, 147–171. https://doi.org/10.5944/reec.31.2018.21592.
Simon, M., & Dougherty, B. (2014). Elkonin and Davydov curriculum in mathematics education. In S. Lerman (Ed.), *Encyclopedia of mathematics education*. Dordrecht: Springer.
Sutherland, J. (1999). *Schooling in the new Russia: Innovation and change, 1984–95*. New York: St. Martin's Press.
The World Bank. (2019). *Annual report. Strengthening the organization* [Electronic]. Available from https://www.worldbank.org/en/about/annual-report/strengthening-the-organization. Accessed 10 Aug 2019.
Webber, S. (2000). *School, reform and Society in the new Russia*. New York: St. Martin's Press.