

### Chapter 3. Providing 21st century learning to all students

*This chapter analyses the recent curricular reform introduced in the Mexican education system, which focuses on delivering 21st century knowledge and skills to Mexican students. It presents the main characteristics of the new curriculum, its content and the tools that schools and teachers have to adapt to students' specific needs. It reviews the curriculum reform process and provides a set of recommendations in terms of remaining challenges, especially on how the curriculum can reach schools and classrooms and how schools, their leaders and teachers can best be supported to implement it.*

## Introduction

For societies to thrive in the future, young people must be prepared to respond to the challenges and opportunities posed by the 21st century so they can shape their own and their country's future. In this perspective, a good education system is one that provides students with high-quality content and learning environments adapted to the 21st century, and combines equity with quality; it delivers high-quality education for all its population (OECD, 2012<sup>[1]</sup>). This is at the heart of high-performing education systems which combine quality with equity and it is what Mexico has been aiming at in recent years.

Following the constitutional reforms and the subsequent modifications of the General Law of Education (*Ley General de la Educación*, LGE, 2013), Mexico's legislators decreed that the relevant authorities should soon revise the country's educational model. More specifically, they inscribed in one of the transitory articles modifying the LGE that the curriculum should be adapted to this new ambition of high quality for all set for the Mexican education system. The country thus started a large-scale consultation process involving numerous stakeholders to define the pillars of the New Educational Model (*Nuevo Modelo Educativo*, NME). One of its key issues for discussion was the design of a new curriculum for basic education that could better prepare young Mexicans for the challenges they will face in their adult life. These changes took the form of the curricular reform developed between 2014 and 2017.

Mexico has successfully designed a curriculum for the 21st century that responds to the challenges faced by the country and aligns with the vision and purpose it defined for its education system, while at the same time blending in some of the best practices acknowledged internationally. This chapter analyses the curricular reform in light of Mexico's constitutional mandate of enhancing both quality and equity in education. More concretely, it puts emphasis on the following aspects:

- the importance of establishing a curriculum around student learning
- the relevance of setting high expectations for all students
- the advantages of providing curricular autonomy to schools.

This chapter discusses how the new curricula aim to prepare students in Mexico for the challenges of rapid technological change and new forms of learning while ensuring learning of quality for all students. It then presents the progress made in this area, regarding preparation for the introduction of the New Educational Model. It concludes with an analysis of remaining challenges and recommendations to address them, focused on implementation.

### Policy issue: Focus the curriculum on learning for all students

In line with a range of countries that have undertaken reforms to adapt to the 21st century, the NME aims to provide the basis for all young Mexicans to develop the knowledge, competencies, cognitive and non-cognitive skills, values and attitudes they need. This section analyses the design of the curricular reform, its coherence with the vision and the mandate of high quality for all that Mexico sets for its education system. It does so in the light of evidence and acknowledged good practices and experiences in other education systems.

### *A curriculum built around student learning*

With one of the youngest populations in OECD countries, Mexico can have a strong demographic advantage if it can develop the skills necessary for its youth to thrive in its fast-changing society and economy (OECD, 2017<sup>[2]</sup>). This will depend on the skills and competencies Mexican students develop in compulsory education. Mexico is a very diverse society, enriched by the various groups that contribute their different cultures, languages and perspectives. The territory itself offers a wide range of climates and land characteristics. Like in many countries, this diversity is both a great strength and a core challenge for Mexico to harness. It has to make sure that all Mexicans can receive equal learning opportunities, which in turn helps enhance social mobility within the country (Delajara and Graña, 2017<sup>[3]</sup>). Mexican students should also learn to know themselves, and respect and collaborate with each other, in order for them to understand the difficulties that their fellow citizens face. These crucial learning components are at the heart of curriculum that still have to be incorporated across many OECD countries and beyond (OECD, 2018<sup>[4]</sup>).

Mexican 15-year-olds' skills have been slowly improving since 2006 according to the OECD Programme for International Student Assessment (PISA), but they remain among the lowest scoring across OECD countries (OECD, 2016<sup>[5]</sup>). Results of the new national student performance tests (PLANEA) show that Mexican students often score within the 2 lower levels of its 4-level scale (Level 1 is “insufficient” and Level 2 is “barely reaching the essential”) (INEE, 2016<sup>[6]</sup>). This means that, in 2017, barely 25% of Mexican students have a satisfactory or outstanding level in language and communication, and only about 15% of students reach these levels in mathematics by the time they leave lower secondary education (*tercero de secundaria*) (SEP, 2018<sup>[7]</sup>). These data should be interpreted with care, however, especially the variation in PISA results, as the increase in enrolment rates for 15-19 year-olds might bias the results downward because of a greater share of potentially lower-performing students (OECD, 2018<sup>[8]</sup>). The progress of students previously enrolled could, therefore, have been greater than what the PISA data shows if the share of lower-performing students had increased. However, this also points to the efforts Mexico made and those that remain to enhance equity throughout its education system. Also, recent information revealed by PISA indicate that the minimum scores observed among the 25% of top-performing youth increased substantially (about 10 points in 3 years) and this shows that when more disadvantaged children gain access to education for the first time, the remaining students can also benefit (Avvisati, 2017<sup>[9]</sup>).

The curriculum in compulsory education is one of the many factors that influence students' academic, personal and social development, as it contributes to forming students' knowledge base and skills. The new curriculum in Mexico results from two decades of reflection on putting the student at the centre of the learning process. It builds upon the previous attempt of RIEB (*Reforma Integral de la Educación Básica*, Integral Reform of Basic Education, 2004-11) to establish a curriculum centred on student learning. The 2004-11 curriculum had made some progress on a competency-based approach, formative assessment for students and sequencing learning within and between the different levels of education. Although this attempt did not translate this new approach into the reality of classroom practices, it did highlight the need for a new teacher profile, linked to the new pedagogical approach suggested (Sánchez Regalado, 2012<sup>[10]</sup>).

In spite of these efforts, however, traditional teaching and practices seemed to have prevailed at the expense of RIEB's new approach. According to the Secretariat of Public Education (*Secretaría de Educación Pública*, SEP), the former pedagogical model had several flaws to address. For instance, it relied on memorising and repeating rather than teaching methods that put learners at the centre; the gaps in learning expectations from one grade to the next were large; the curriculum was content-heavy and did not grant the students time enough to deepen the subjects; and the curriculum did not include socioemotional skills nor English as a compulsory subject (SEP, 2017<sub>[11]</sub>). These were enough concern for the administration and legislators to call for a new curriculum.

Experts nuance the diagnostic defended by the administration. Most do not do so to attack the innovations of the 2017 curriculum. Rather, they give credit to allowing for some continuity between curricula, while shedding light on what they see as aesthetic changes. For instance, the 2017 curriculum shifts from a “competency”-based to a “learning”-based approach, and incorporates the pedagogical principles of “learning to learn”, “learning to be” and “learning to coexist” instead of “competencies for life” (*competencias para la vida*). This does not fundamentally change the nature of the key knowledge, skills and competencies included in the curriculum (Chuquilin Cubas and Zagaceta Sarmiento, 2017<sub>[12]</sub>; Torres Hernández et al., 2018<sub>[13]</sub>). This is rather reassuring for teachers and students who can better grasp what is expected of them. As developed below, the 2017 curriculum brings some widely acknowledged innovations among which some clear vision of student development with an integral vision, which comprises academic, social, emotional and physical development, for instance, through the integration of socioemotional skills as key learning outcomes (*aprendizajes clave*) threaded in the entire curriculum, and the inscription of English as a compulsory subject.

At its simplest, the curriculum is defined as a “plan for learning” which sets out (among other elements) the rationale and aims of student learning, its content and the materials and resources used in the process (van den Akker, 2007<sub>[14]</sub>). Depending on the education system, a curriculum can be limited to framing guidelines for lower levels of governments and schools to create their own curricular content, or it can go into details about the learning objectives and methodologies; the related pedagogical activities and materials; and the corresponding assessment criteria and techniques. Mexico's new curriculum defines not only the learning objectives, contents and their structure but also the corresponding materials (e.g. including textbooks); it suggests pedagogical activities and defines learning standards by grade. Observers during the OECD visit noted that it is more broadly defined than previous curricula in Mexico and that teachers will have more flexibility than before in course design.

The curriculum for compulsory education in Mexico builds on a humanistic view of education and aims to provide high-quality, holistic education to all. A premise is the observation that 21st century learners' needs are complex and that education must prepare students for the unknown.<sup>1</sup> The new curriculum also acknowledges recent progress in education research, including the role of the social and physical environment in learning as well as the necessity to adapt to learners' special needs in the process (SEP, 2017<sub>[15]</sub>). Some of its core principles show efforts to ensure some continuity with the previous curricular reform of 2011 (*Articulación de la Educación Básica*).

The learners and their needs are set at the centre of the process and deep learning methods are promoted over memorisation alone. This aligns with recent curricular reforms and efforts to change the national curriculum in a wide range of education systems. Box 3.1 details two such efforts, in Finland and in Wales.

**Box 3.1. Selected curricular reforms across OECD: Focus on student learning****Finland**

The most recent comprehensive curricular reform in Finland was conducted between 2012 and 2016. It aimed to enhance quality and equity by modernising learning, teaching methods and learning environments, and by promoting a new school culture. Traditional subjects are still taught as separate courses but their content and the ways to teach and assess them changed to reflect real-life situations where transdisciplinary approaches and transferable competencies are needed (Finnish National Agency for Education, 2014<sub>[16]</sub>). The new national curriculum was designed following a broad framework that local municipalities and schools then take and adapt to their own individual context (Hopkins, Nusche and Pont, 2008<sub>[17]</sub>). It offers guidelines for the overall provision of education as well as the objectives and key instruction content. It also details the new co-operative culture expected to be developed in schools, gives instructions and guidance for its own implementation and offers some support for learning, pupil welfare as well as an assessment of learning (Finnish National Agency for Education, 2014<sub>[16]</sub>).

**Wales**

Wales engaged in a major reform of its curriculum and associated assessment arrangements, declaring they had to embody the aspirations that Wales has for its children and young people. Formalised in *A curriculum for Wales – A Curriculum for Life* (Welsh Government, 2015<sub>[18]</sub>), these aspirations consist in becoming:

- ambitious, capable learners, ready to learn throughout their lives
- enterprising, creative contributors, ready to play a full part in life and work
- ethical, informed citizens of Wales and the world
- healthy, confident individuals, ready to lead fulfilling lives as valued members of society (Donaldson, 2015<sub>[19]</sub>).

To respond to these “four purposes”, the new curriculum framework organises learning into six transdisciplinary Areas of Learning: i) expressive arts; ii) health and well-being; iii) humanities; iv) literacy, languages and communication; v) mathematics and numeracy; vi) science and technology. Three fundamental competencies (digital competencies, literacy and numeracy) were defined as “cross-curriculum responsibilities”, to acknowledge how each area contributes to enhancing students’ mastery of the subjects. With this new framework, the aim is to make learning more experience-based, the assessment of progress more developmental, and to give teachers the flexibility to deliver in more creative ways that suit the learners they teach.

In Mexico, the vision of the Mexican learner in the 21st century is outlined in the Letter on the Purposes of Education (*Carta de los Fines de la Educación*), which was discussed and validated through the 2014-16 consultation process (see Box 3.2).

**Box 3.2. The purpose of education in Mexico (final version agreed in 2017)**

*"The purpose of basic and upper secondary public education is to contribute to educating citizens that are free, responsible, informed, able to exercise and defend their rights, and who participate in the social, economic and political life of Mexico. This means that these individuals should have the motivation and the capacity to succeed in their personal, professional and family life; that they should be ready to improve their social and natural environment, as well as to learn throughout their lives in a complex and fast-changing environment.*

*More specifically, all students who finish compulsory education should be able to communicate correctly, confidently and efficiently in Spanish and in any indigenous language in case they speak one; to identify key ideas in texts to make conclusions; to communicate in English; to use hypothetical, logical and mathematical thinking and to solve daily and complex problems; to be capable of analysing as well as synthesising; to know how to argue, be critical, reflexive, curious, creative and demanding; to learn about natural and social processes, about science and technology to understand their environment; to be competent and responsible in their use of information and communication technologies; to have the ability and the desire to keep learning throughout their lives.*

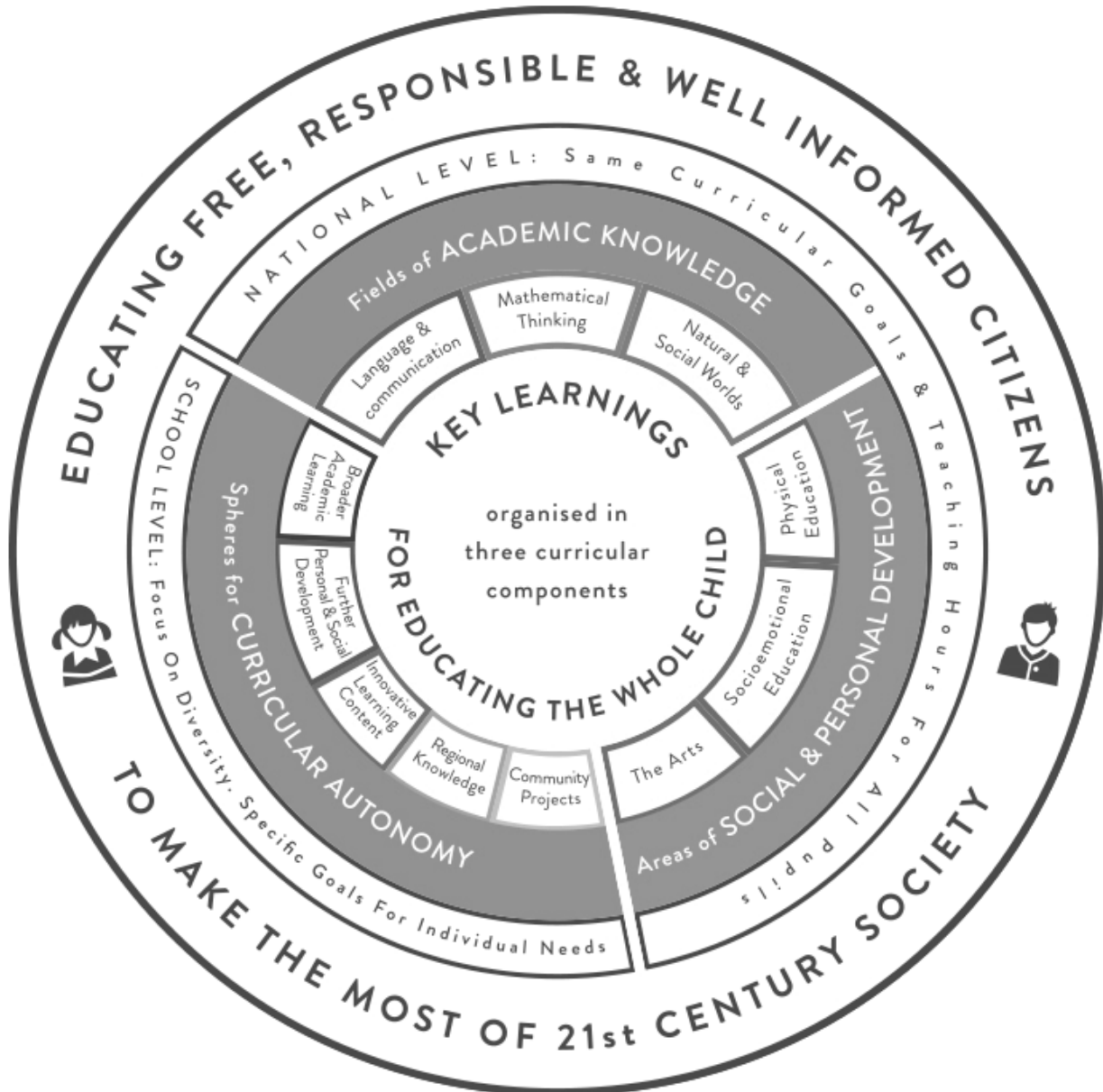
*These individuals should know and respect themselves; accept and value their identity; reflect on their own acts; know their weaknesses and strengths; be confident in their abilities; be determined and perseverant; acknowledge the equality of all human beings in their rights and dignity; and empathise with other people and cultures; work in team and develop leadership skills; prefer dialogue, reasoning and negotiation to resolve conflicts; care for their physical and mental health; take reasoned and responsible decisions to adapt quickly and efficiently to surrounding changes, and be able to elaborate and follow a plan to build a fulfilling life. They are driven by values, behave ethically and coexist in harmony; know and respect the law; defend the Rule of Law, democracy and human rights; promote gender equality; value ethnic, cultural and language diversity in the country and worldwide; know the histories that unite us and give us identity and belonging to a territory in the global context; feel love for Mexico; be creative and have a sense of aesthetics, appreciate culture and the arts; take care of the environment; participate in a responsible manner in public life and contribute to sustainable development in their community, the country and the world. This conception of the Mexicans that we want to educate requires that students progressively master the key learning outcomes they are expected to attain during their schooling."*

Source: SEP (2017<sup>[20]</sup>), *Los Fines de la Educación en el Siglo XXI*, <https://www.gob.mx/nuevomodeloeducativo/documentos/carta-los-fines-de-la-educacion-en-el-siglo-xxi-2>.

In line with Mexico's diagnosis of its own needs and with international evidence, the 2017 curriculum relies on a sequence of graduation profiles (*perfiles de egreso*). These profiles were defined from basic education to upper secondary levels for the first time, in the attempt to define a coherent progression throughout education levels. They determine what the students should have learnt by the time they finish each grade. The curriculum's structure is composed of three main areas: academic items (*campos de formación académica*), personal and social development elements (*áreas de desarrollo personal y*

social) and a set of pedagogical activities left for the schools to design autonomously (*ámbitos de autonomía curricular*). These span the four fundamentals of education: learning to know, learning to be, learning to coexist and learning to do (Delors, 1996<sup>[21]</sup>). Integrating these four aspects of learning into the new curriculum is a way for Mexico to adapt widely acknowledged pedagogical principles to its own context. Figure 3.1 displays the curricular components and their structure.

**Figure 3.1. New curriculum for basic education: Key learning outcomes for integral education**



Source: SEP (2017<sup>[22]</sup>), *Aprendizajes Clave*, <https://www.aprendizajesclave.sep.gob.mx/> (accessed on 05 September 2018).

The graduation profile for compulsory education (*perfil de egreso de la educación obligatoria*) is based on the 3 main areas and on 11 fields of learning (*ámbitos*), including language and communication, mathematical thinking, understanding the natural and the social world, physical and socioemotional educations, and the arts. Each education level has key learning outcomes in each field, and these outcomes are connected, becoming more complex and introducing more knowledge and skills until the student reaches the end of compulsory education and the expected graduating profile.

A dedicated chapter of the Study Plan (*Plan y programas de estudio para la educación básica 2017*, PyPE) details each subject's purpose and general principles, it describes its specific curricular structure and learning standards, and it suggests an array of pedagogical methods and assessment approaches to guide teachers. In general, the guidelines provided to teachers suggest: switching between punctual and recurrent pedagogical activities depending on the topic at hand; sharing the time between getting information, reflecting on the issues and analysing them both individually and collectively; and using a mix of didactic sequences and project-based activities (SEP, 2017<sub>[23]</sub>; SEP, 2017<sub>[22]</sub>). These general guidelines are coherent with what international evidence suggests are good teaching practices for modern curricula (OECD, 2018<sub>[4]</sub>). The website [www.aprendizajesclave.sep.gob.mx](http://www.aprendizajesclave.sep.gob.mx) provides publicly pedagogical orientations and suggestions for assessment for each key learning outcome, in each subject of every grade. A final section of the Study Plan outlines what changes from the previous curriculum to the new one for each subject.

Mexico is one of the first countries to include socioemotional education as a compulsory component in their curriculum (according to Professor Rafael Bisquerra Alzina, an expert in emotional intelligence education, cited in Pérez (2017<sub>[24]</sub>)). Aligning with the interest in socioemotional education worldwide, Mexico aims to develop socioemotional skills in its students to help them know and understand themselves (self-knowledge or *autoconocimiento*), control their own emotions and be persistent (self-management or *autorregulación*), be autonomous (*autonomía*), empathise (social awareness or *empatía*) and collaborate with others (relationship skills or *colaboración*) (SEP, 2017<sub>[23]</sub>).

The new curriculum allocates half an hour per week to socioemotional education in pre-school and primary school, and one hour in secondary grades, but insists that socioemotional skills should be worked on and acknowledged at other times in the week when teaching other subjects. This aligns with international evidence on good practices to facilitate socioemotional learning, which include (but are not limited to): defining a specific study plan for socioemotional learning; developing socioemotional skills in the traditional curricular subjects; and fostering collaboration and using projects and inquiry as a basis for learning in general (World Economic Forum, 2016<sub>[25]</sub>). Other countries investigate the topic or include socioemotional skills (also known as non-cognitive skills) as key skills to develop through all subjects, including for instance Finland and Wales (see Box 3.1). Indeed, international evidence shows that socioemotional skills can be developed through virtually all traditional subjects. For instance, co-operation and collaboration skills can be spurred by activities in the arts, humanities, mathematics, national languages, physical and health education, science and technologies (Schleicher, 2018<sub>[26]</sub>).

### ***Setting high expectations for all students***

The key learning outcomes defined in the new curriculum (*aprendizajes clave*) set clear expectations for student learning in each subject of each grade. “Learning attainments” or



“learning outcomes” are “[...] statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competency” (Cedefop, 2014<sup>[27]</sup>). Evidence shows that rigorous curricula provide the basis to reach high standards of learning with adequate support and can help students achieve their potential (Riley and Coleman, 2011<sup>[28]</sup>).

The PyPE specifies the expected levels of attainment (or learning outcome objectives) per grade in order to smooth out students’ progression in each subject. It does so for all grades in basic education (2017), starting with pre-primary education (*educación preescolar*) right up to lower secondary education. It made sure that the pedagogical guidelines used for initial education (*educación inicial*, between 0 and 3 years old) aligned with the new curriculum. Therefore, the new pedagogical model launched for the initial education of children between the age of 0 and 3 (*Programa de Educación Inicial: Un Buen Comienzo*, Programme for Initial Education: A Good Start, 2017) aligns with the curriculum for basic education (SEP, 2017<sup>[29]</sup>). Efforts are also still being made to align the learning progression between basic education and the Common Curriculum Framework of upper secondary education (*Marco Curricular Común*, 2008). Table 3.1 displays an example of such learning progression in the Spanish-as-first-language module, from the first to the last cycle of primary education.

**Table 3.1. Expected learning progress on the ability to summarise in Spanish**

Social practices of language, primary education						
	1st Cycle		2nd Cycle		3rd Cycle	
	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
Elaborating of texts that present summarised information coming from different sources	<ul style="list-style-type: none"> <li>Summarises information about known natural and social processes</li> </ul>		<ul style="list-style-type: none"> <li>Elaborates summaries which describe natural processes and historical events</li> </ul>		<ul style="list-style-type: none"> <li>Elaborates summaries of various works</li> <li>Uses informative texts to expand one’s knowledge of various themes</li> </ul>	

Source: OECD elaboration based on SEP (2017<sup>[30]</sup>) *Aprendizajes Clave para la Educación Integral - Plan y Programas de Estudio para la Educación Básica Lengua Materna Español*, [https://www.aprendizajesclave.sep.gob.mx/descargables/LENGUA\\_MATERNA\\_ESPANOL.pdf](https://www.aprendizajesclave.sep.gob.mx/descargables/LENGUA_MATERNA_ESPANOL.pdf) (accessed on 17 September 2018).

The definition of learning outcome objectives in Mexico also gave way to new guidelines in terms of student assessment in the classroom. Globally, the idea behind the new assessment system is to move away from traditional grading scales and toward a scale that is directly connected with attainment indicators (*indicadores de logro*), which defines levels that are meaningful pedagogically. Based on the scale used for PLANEA (the national external student assessment), a scale of four levels of performance (*niveles de desempeño*) serves to assess the level of students in each key learning outcome in the classroom: Level IV (*N-IV*) indicates an outstanding mastery of the expected learning outcome (*aprendizaje esperado*) while Level I (*N-I*) indicates an insufficient performance compared with expectations. The grading practices will be adapted to the age group and to the subject being evaluated (SEP, 2018<sup>[31]</sup>):

- In pre-primary levels, assessments will result in qualitative appreciations of the student’s level using the four levels on each expected learning for this student’s grade.
- In primary and lower secondary, the assessment will also use the four performance levels as purely qualitative appreciations for the arts,

socioemotional educations, physical education and the activities realised in the scope of curricular autonomy.

- In terms of academic subjects, the four levels will be linked to a grade between 5 and 10, with number 10 corresponding to N-IV, numbers 8-9 to N-III, 6-7 to N-II and 5 to N-I, the only failing grade.

Learning outcome objectives and levels of performance spelled out in the curriculum cannot by themselves guarantee that student learning will improve. Experience shows that some policies such as targeted professional development activities for local educators and setting new inspection standards to be applied by inspectorates are essential to enable the change to an approach based on learning outcomes (Cedefop, 2016<sub>[32]</sub>). Even if the grading scale shifted towards a more qualitative approach, as is the case in Mexico, what matters for learning is how and what the results of this evaluation are used for. In other words, changing the scale is only going to improve student learning if it comes with the pedagogical instruments that enable teachers and students to associate these results with ways to improve in specific learning areas (whether with numerical or qualitative results).

The educational approach and teaching support mechanisms are also essential for learning outcome objectives to successfully contribute to student learning: teachers, who need to adapt their practices to this approach, require well-elaborated pedagogical support and material (Cedefop, 2016<sub>[32]</sub>). Teachers themselves also need to be flexible in their teaching and master the subject area and competencies aimed at students to develop (Looney, Siemens and Miller, 2011<sub>[33]</sub>). The way the educational staff is assessed, the opportunities they have for training and professional development and the way they interact can facilitate this change in pedagogical practices, and directly impact student learning as well (Hattie, 2017<sub>[34]</sub>). Evidence has shown the effectiveness of a range of practices, including formative assessment, time spent reflecting on own teaching practices (OECD, 2013<sub>[35]</sub>) and collaboration between peers (Pont, Nusche and Moorman, 2008<sub>[36]</sub>), provided the school has the autonomy to do so.

This learning outcome-based approach adopted by Mexico is supposed to support greater equity of learner outcomes, taking into account that all students are considered able to achieve at least the same level of outcome, no matter what their socio-economic background. Learning outcome objectives materialise for students what the education system expects them to learn. Students' self-expectations are a significant factor among the many that influence learning inequalities. If the learning objectives are set lower depending on student characteristics, they are rather likely to stigmatise these students by signalling that the system expects less of them than of others. Research shows that lower expectations have negative consequences on the delivery of the curriculum, the quality of instruction provided by teachers, and especially on the students' self-esteem, aspirations and motivation to learn (Leithwood, 2010<sub>[37]</sub>; OECD, 2012<sub>[1]</sub>).

Learning outcome objectives provide a reference against which to measure one's achievement but they do not (theoretically) constrain individual students on the means to attain standard levels. There are many ways to acquire knowledge and skills for students, and with enough pedagogical flexibility, a learning outcome-based approach respects students' diversity in learning (Cedefop, 2016<sub>[32]</sub>). What is more, teachers with good diagnostic skills may identify individual learners' needs and support them to reach the outcome, whatever their socio-economic background (Cedefop, 2008<sub>[38]</sub>).

### *Curricular autonomy*

Besides academic learning and student development (including socioemotional education), a third curricular component is designed specifically to provide room for schools to partially adapt the programme to their needs. This is part of the New Educational Model's (NME) attempt to give more weight to schools' perspectives in their own management. This initiative – called “School at the Centre” (*La Escuela al Centro*) – aims to shift the education system's focus on the school unit. The premise is that the schools are the primary space dedicated to student learning and therefore the focus of the impact of education policies.

One of the areas in which the initial plans for more school involvement is the elaboration of the curriculum. In 2015, Mexico was the third PISA country in which schools and teachers had the most limited influence over resource and curriculum management, as reported by school leaders (OECD, 2016<sub>[39]</sub>). Curricular autonomy is expected to enhance quality and increase equity of the learning content if it is balanced with some prescription from the national level (Sinnema, 2017<sub>[40]</sub>).

With the new curriculum in Mexico, the school is invited to determine a part of its curriculum in agreement with its Technical Council (*Consejo Técnico Escolar*, CTE), its students and its Social Participation Council (*Consejo Escolar de Participación Social en la Educación*). Five types of pedagogical activities (*ámbitos*) can be adapted in this school autonomous space: advanced academic subjects, personal and social development, specific subjects such as coding or robotics, regional content and social impact projects.

International evidence points to a positive but complex relationship between greater curricular autonomy and student performance (OECD, 2016<sub>[39]</sub>). PISA 2012 shows a positive correlation between 15-year-olds' mathematics performance and the level of school autonomy over curriculum and assessment. PISA 2015 also finds that student performance in science increases when teachers, school principals, school governing boards and local or regional authorities have curricular responsibilities, while the same performance is lower when the curriculum is elaborated by a national education authority (see Figure 3.2 below). The correlation is not automatic in all education systems (Steinberg, 2014<sub>[41]</sub>). Overall, however, schools that belong to education systems where they have the possibility to exert curricular autonomy score higher than schools in systems without curricular autonomy, independent of whether the individual school has curricular autonomy itself (Calero Martínez, 2009<sub>[42]</sub>; Ortega Estrada, 2017<sub>[43]</sub>).

Whether curricular autonomy enhances student performance and how much autonomy should be granted to schools are determined by a country's context. Influencing factors include the country's accountability framework, the current level of student achievement in terms of quality and equity, and the capacity of school leaders and teachers to assume this autonomy (Radinger et al., 2018<sub>[44]</sub>). As countries elaborate their curricular reforms, they must find their own balance between school autonomy that allows for flexibility of the curriculum and central prescription that guarantees some standards of learning (Sinnema, 2017<sub>[40]</sub>). Attention and dialogue about the various influencing factors should help make the curriculum suitable for a given country at a given time (Sinnema, 2016<sub>[45]</sub>).

In the new curriculum, the number and diversity of subjects proposed for the autonomous component are determined by CTE, based on the number of instruction hours and the schools' level of “organisational maturity” (*madurez institucional*).

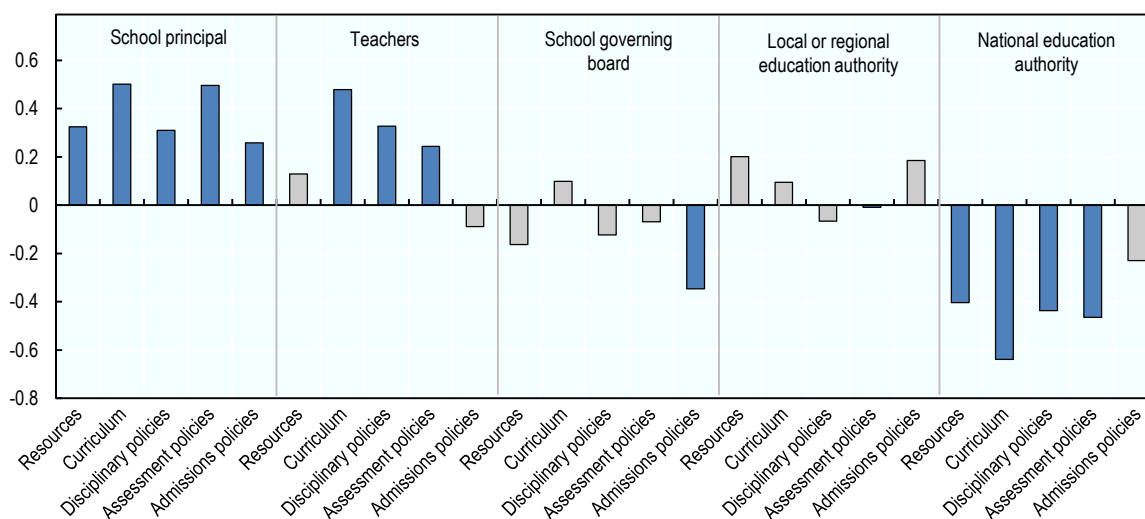
- The number of hours devoted to autonomous curriculum subjects depends on the level of education and the type of school. For instance, a regular primary school

could have 2.5 hours per week, while a full-day school could have up to 20 hours weekly.

- The level of organisational maturity of a school is based on an algorithm conceived by the SEP, with information on the schools' staff, education outcomes, pedagogical strategy (*Ruta de Mejora Escolar*), basic services and an auto-evaluation by the school leader and the supervisor (SEP, 2017<sub>[22]</sub>).

The data is provided by the school director and the supervisor or collected through the existing administrative database. The diagnosis is supposed to indicate the degree of maturity of the school as an organisation. Each school is awarded a weighted average score based on which educational authorities make a suggestion on how many areas the school should exert autonomy in, and which ones should be given priority. For instance, a school with an average score between 0% and 1.9% is in the less mature level and can only devote time for autonomous curriculum in 2 of the 5 areas. In this case, the administration recommends prioritising the extra academic courses over the other fields (SEP, 2017<sub>[15]</sub>).

**Figure 3.2. Correlations between the responsibilities for school governance and science performance, PISA 2015**



*Notes:* The responsibilities for school governance are measured by the shared distribution of responsibilities for school governance in OECD (2016<sub>[39]</sub>).

Results are based on 70 education systems.

Chart bars above the horizontal axis indicate positive correlations while bars below the axis indicate negative correlations. This means, for instance, that higher science scores are observed when the school principal is responsible for school resources, curriculum and disciplinary, assessment and admission policies, whereas lower science scores are observed when a national education authority is responsible for these elements of school governance.

Statistically significant correlation coefficients are shown in a darker tone.

*Source:* OECD (2016<sub>[39]</sub>), *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*, <http://dx.doi.org/10.1787/9789264267510-en>.

StatLink  <http://dx.doi.org/10.1787/888933435864>

Other countries have designed and implemented partial curricular autonomy or flexibility in recent years. Box 3.3 gives the recent example of Portugal's Project for Autonomy and

Curriculum Flexibility, a voluntary pilot project for schools to build their capacity to exert curricular autonomy and flexibility.

### Box 3.3. Curricular autonomy in Portugal

In 2015, Portugal initiated a series of programmes and initiatives to enhance the quality of its students' learning. The Project for Autonomy and curriculum Flexibility (PACF, 2017/18) builds upon this effort and provides volunteer schools with the necessary conditions to manage the curriculum while also integrating practices that promote better learning. PACF was being implemented in more than 200 schools as a pilot project during the 2017/18 school year. The OECD supported Portugal in drawing a few conclusions from the PACF initiative and informing the design and implementation processes of its curriculum. Importantly, Portugal invested massively in building capacity and communicating about curricular autonomy at the school level.

The pilot project enabled teachers to design and experience meaningful in-school professional development. They were also able to implement curricular and pedagogical changes that allowed them to engage with students with diverse needs and backgrounds. Because of this, PACF has the potential to increase inclusion and equity in schools.

Students also benefitted directly from the pilot project, because they experienced innovative ways to learn, including with peers, by meeting professionals, learning outside the classroom and making their own choices about what they learnt. Some notable challenges also arose during the pilot: while teachers were asked to spend time on innovating pedagogical practices, they also had to prepare students for the national exam, two obligations which sometimes seemed to conflict with each other. The technicalities that the flexible curriculum requires (such as changing the school schedule) could be difficult to align with other schools' initiatives and jeopardise their success. Finally, cultivating professional practices that enable teachers to exert curricular autonomy and flexibility requires time and sustained investment in teacher autonomy and leadership skills. The OECD suggested that the Portuguese government give priority to providing training and pedagogical support to teachers, as well as professional development opportunities on a volunteer basis. Failing such commitment, it is likely that only the schools that already have an innovative minded staff would be able to get positive results out of curricular autonomy in the long run.

*Source:* OECD (2018<sup>[46]</sup>), *Curriculum Flexibility and Autonomy in Portugal: An OECD Review*, <https://www.oecd.org/education/2030/Curriculum-Flexibility-and-Autonomy-in-Portugal-an-OECD-Review.pdf> (accessed on 05 September 2018).

From an international perspective, Mexico's intent to grant more pedagogical flexibility to schools aligns with the efforts of other education systems to improve student learning. However, some conditions are necessary for curricular autonomy or flexibility to actually enhance students' learning. The country's school accountability system and its educational staff's skills in leadership and planning seem, for instance, to play a crucial role in the success of curricular autonomy. If Mexican schools and staff can master these skills, partial curricular autonomy could greatly enhance both the quality and adequateness of learning, as well as equity.

The same potential and possible limitations apply for the rest of Mexico's new curriculum. Many of its features align with current good practices to prepare students for

21st century challenges – e.g. putting student learning at the centre and insisting on the various components of learning and ways to learn rather than focusing on rote knowledge and memorisation. However, the ways the curriculum is received and appropriated by teachers, students and the rest of the school community are determining factors in its effective contribution to the quality of learning.

## Assessment

Curriculum changes require time, large-scale support among education stakeholders and careful design and planning if they are to be effectively implemented in the classrooms (OECD, 2018<sup>[4]</sup>). Mexico started with a consultation process (CIDE-PIPE, 2016<sup>[47]</sup>), where a wide range of stakeholders in education was invited to engage in the development of the new curriculum in a collaborative manner. Overall, the curriculum appears to respond to 21st century needs and to be focused on Mexican learners and their needs. The SEP made noticeable efforts to elaborate and follow a detailed implementation sequence, to include the adjustments introduced between the first curriculum proposal and the adopted version, and to develop some essential materials, in response to concerns regarding implementation.

When looking at the implementation of a policy or reform, there can be a significant gap between the reform design, which outlines policy makers' theory and expectations, and the resulting practices in schools and other educational institutions. This section focuses on the relationship between policy on paper and policy in practice, mainly on the main operational achievements in the implementation of the curriculum reform.

### *A curriculum built collaboratively and aligned with the Mexican vision for education*

The government succeeded in carrying out a large-scale public consultation so the New Educational Model would be built with inputs from, discussions and consensus among representative stakeholders of the Mexican society. Leading this consultation was an achievement in itself, as it allowed a wide diversity of stakeholders to express their views, to forge and then to review the proposals for the new vision and education curriculum. Spearheading the process were the SEP and the Centre for Economic Studies and Research's (*Centro de Investigación y Docencia Económica, CIDE*) PIPE (*Programa Interdisciplinario sobre Política y Prácticas Educativas del Centro de Investigación y Docencia Económicas*, Interdisciplinary Programme Education Policy and Practice of the Centre for Economic Research and Teaching), which played an important role in moderating, collecting and analysing the data. The CONAPASE also contributed to the consultation process, in line with its responsibility to review the study plans for basic education (CONAPASE, n.d.<sup>[48]</sup>). The consultation generated close to 300 000 contributions between 2014 and July 2016, through various mechanisms summarised in Table 3.2.

Through these meetings and consultations, a wide diversity of actors could express their views, from school communities (including students, parents, teachers, school leaders and their Technical Councils) to curriculum experts, academics, thematic committees, political entities (such as state governors, the National Union of Education Workers [SNTE]), civil society organisations, lawmakers and any individual participating in one of the open fora or through the online consultation.

**Table 3.2. Summary of the source of data for public consultation on the New Educational Model, 2016**

	Number of recordings	Number of contributions
Discussion fora organised by the SEP for each key stakeholder group	89 panels 5 plenary discussion	6 272
Discussions held during the Schools' Technical Councils ( <i>Consejos Técnicos Escolares</i> , CTE)	17 715	161 530
Discussions held during upper secondary schools' Technical Councils ( <i>Academias</i> )	12 793	112 454
Fora held at the state level	216	4 439
Discussions held by expert commissions and organisations	28 documents	
Online consultation platform	51 013	13 570
<b>Total recorded contributions</b>	<b>81 859</b>	<b>298 265</b>

Source: Adapted from Table 1 in CIDE-PIPE (2016<sup>[47]</sup>), *Consulta sobre el Modelo Educativo 2016*, Centro de Investigación y Docencia Económicas (CIDE).

The final report (CIDE-PIPE, 2016<sup>[47]</sup>) was published in July 2016, aiming to inform the final review process of the New Educational Model. The report analyses the outcomes of the whole consultation, as well as the public opinions about the consultation process itself. Overall, the latter appears very positive: contributors and participants in the discussion evoked their satisfaction that their opinion was taken into consideration. However, participants still had some concerns in July 2016, when the documents were handed to the SEP and expert reviewers, namely:

- The lack of clarity on how the government expected to implement the new curriculum in a short period of time (the official calendar had all schools starting to implement the curriculum in the 2018/19 school year).
- The absence of information about the budget available for this implementation.
- The grey area concerning dispositions for educational staff training (CIDE-PIPE, 2016<sup>[47]</sup>).

Several of these concerns were addressed by the SEP while others, analysed in the next sections, remain.

The consultation process helped achieve several key elements of the curriculum reform implementation, including building a consensus around the vision, approach and content of the 2016/17 curriculum (CIDE-PIPE (2016<sup>[47]</sup>); own information during the visit). The discussions held in parallel about the purpose of education were instrumental.

First, this was a first time in which a curriculum was built around a clear vision of the purpose of education drawn up in the map outlining the purposes of education (*Carta de los fines de educación*, 2016/17). Evidence shows that curricula are more likely to be adopted, implemented and sustained when it is coherent with a clearly defined and shared vision for education.

Second, the curriculum clearly outlines what each student needs to learn by the end of each grade in basic education. Having a clear vision of the purpose of education facilitated the definition of the graduating profiles defined (*perfil de egreso*). This, together with the focus on learning progression, resulted in a clear curricular structure from initial to lower secondary education. The work done also allowed for aligning this new structure with the *Marco Curricular Común* (Common Curriculum Framework) in use in upper secondary education. Aligning the two curricula contribute to facilitating the

progression from one grade and one education level to the next, which is especially crucial at the transition between lower and upper secondary. Some adjustments are still needed to achieve greater coherence between the two curricula, however, considering the diversity of upper secondary education models (SEP, 2017<sub>[15]</sub>).

The new curriculum has been called ambitious, whether with a positive or a negative perspective (CIDE-PIPE, 2016<sub>[47]</sub>). In terms of the pedagogical approach and content, “ambition” referred to the humanistic perspective and the inclusion of socioemotional skills as key learning outcomes in the curriculum for basic education. The OECD team was told during meetings with education stakeholders that this “ambition” in pedagogical terms was rather well received, included by school leaders and teachers. Seen in a historical perspective, the discourse about integral education is nothing new in Mexico (Sánchez Regalado, 2012<sub>[10]</sub>). It seems that the 2016/17 curriculum helped make progress in the debate on how much academic content and socioemotional skill development make a balanced curriculum, as it reached a wide consensus on the inclusion of socioemotional learning (CIDE-PIPE, 2016<sub>[47]</sub>).

### *A clear sequence for curriculum implementation*

A concrete plan for implementing the curriculum reform can be found within the broader New Educational Model Implementation Plan document (*Ruta de Implementación del Nuevo Modelo Educativo*) published in March 2017. The plan outlines the main steps in implementation, their timeline and goals for a number of key actions, including the study programmes for basic education and the elaboration and distribution of new educational materials (SEP, 2017<sub>[49]</sub>). Having a clear plan is structuring for any complex action, and even more so when it comes to implementing education reform. Plans map out the various actions necessary to carry out a reform, thus bringing the policy design closer to the ground. The exercise allows for noticing potential incoherencies between these actions; it facilitates the distribution of tasks between actors and the monitoring of the overall project. It must be noted, however, that a plan is destined to evolve and adapt to the necessary changes that unavoidably happen during policy implementation: it is supposed to support the action and not coerce it just for the sake of “sticking to the plan” (Fullan, 2015<sub>[50]</sub>).

The implementation plan had a few pilots for specific programmes. The curricular autonomy component was tested during the 2017/18 school year. The participating schools, dubbed “Phase 0 schools” (*escuelas de fase 0*), were expected to be 1 162 in total, including 525 primary schools (448 in general and 77 in indigenous education) and 316 lower secondary schools (79 in general education, 191 *telesecundarias* and 46 in technical education or “*técnicas*”) (SEP, 2017<sub>[49]</sub>). Some report that a little under 1 000 schools actually took part in the pilot (González-Rubio, 2018<sub>[51]</sub>). Both regular schools and full-day schools were involved. The school staff was supposed to receive and process the new curriculum between May and August 2017; assess their students’ interest and the resources available to determine which workshops (*clubes*) would be offered during the year; attend training for teachers and school leaders; and use the organisational maturity assessment tool to estimate how many options they could cover in the five alternatives for curricular autonomy. Schools were also supposed to inform parents about the purpose of the new workshops, to schedule and carry them out, to rotate the students so they could attend various workshops in the year, and to monitor each workshop throughout the process.



The OECD team visited selected Phase-0 schools in the states of Puebla and Morelos, as well as in the City of Mexico. Some initial results were reported by schools on their experience with curricular autonomy in other states as well. Overall, the schools we visited appeared satisfied with the pilot. The staff acknowledged that being a part of Phase 0 allowed them to get to know the curriculum better and earlier, and not only the curricular autonomy component. This was valuable, they thought, as all schools are expected to implement the new curriculum starting August 2018. The preliminary feedback from phase 0 points to a number of lessons learnt for the implementation of the curricular autonomy, including:

- Having adequate infrastructure such as enough space, a library, a computer room, or a covered courtyard; equipment, such as computers, projectors and an Internet connection; and resources, in general, are of major importance for the workshops to occur.
- Educational authorities, both central and local, making sure that staff and parents understand the new curriculum and the purpose of the curricular autonomy component, failing which they may consider the workshops as just an extension of recreation.
- Promoting a favourable atmosphere among students who attend classes and respect each other, teachers who attend and are open to innovation, parents who are informed and ready to get involved, and a wider community with which to partner (such as universities), highlighted as an opportunity by schools (SEP, 2018<sup>[52]</sup>).

It remains unclear whether these lessons were raised in time to inform the first steps of the national launch in August 2018. The schools visited in June still had questions about who should be in charge of conducting the extra activities, what can be achieved in regular schools which only have half an hour a day reserved for these activities. Curricular autonomy provides a margin for professionals to innovate but the benefit it can bring to students can be reduced if the options are too limited (for instance, if schools are only allowed to set up workshops when they would like to teach regional-specific content).

Curricular reforms suffer from time lags between recognition, decision making, implementation and impact. The gap between the intent of the curriculum and learning outcome is generally too wide (OECD, 2018<sup>[4]</sup>). This gap was noticed in the implementation of the previous curriculum (2011) in Mexico. For instance, Ruiz López and Armendáriz Ponce conclude that, if teachers in the cities of Juarez and Chihuahua had been able to adapt some of their practices to the 2011 curriculum, they lacked sufficient paid hours to establish long-term pedagogical strategies, although the latter were essential for students to benefit fully from the curriculum (Ruiz López and Armendáriz Ponce, 2017<sup>[53]</sup>). The national implementation of the new curriculum ushers in significant challenges which national education authorities have to face together with actors at the school, local and state levels.

### ***Instructional and teaching material tailored to the new pedagogical approach***

In line with the curriculum's reach for quality with equity, the SEP was planning on revising or generating more than 185 million educational items for all grades from pre-school to lower secondary education, including specific materials for students with an indigenous language as their mother tongue, students with vision impairment and

students in special education. These include textbooks, teacher books, literary books, audio-visual content for *telesecundarias* and other pedagogical items for the classroom. All of these were paid for out of the federal budget for education and distributed for free to all schools for students, teachers and school leaders. The elaboration, publication and distribution of this material constitute a major achievement in the implementation of the curricular reform, as providing adequate educational tools is crucial to ensure that new curricula reach the classroom and contribute to student learning in an equitable manner. In 29 PISA-participating education systems, the capacity to provide instruction in socio-economically disadvantaged schools is more hindered by a lack or an inadequacy of educational materials and physical infrastructure than in more advantaged schools. On average, these shortcomings and inadequacies also affect rural schools more than urban ones (OECD, 2016<sup>[39]</sup>).

In order to accompany the new curriculum into the classroom, the SEP and the education authorities of each federal entity set up a number of training and support mechanisms for school staff. At the federal level, the SEP published a special book series (*Aprendizajes Clave para la Educación Integral*, Key Learning Outcomes for Integral Education) that puts the study plan into the broader context of the New Educational Model, with one volume per grade (in primary education) and one per subject (in lower secondary education). These books are primarily directed at teachers, laying out not only the content of the study plan but also the purpose of this new content, and some pedagogical advice on teaching and assessment methods. Materials were also developed for school leaders and supervisors to understand how to refocus their daily work practice and professional skills on enhancing their students' learning. For instance, the supervisors received methodological sheets to help them run their CTE – essential to the implementation of the curriculum – and teachers were sent guidelines to help prepare for CTE discussions.

On top of these materials, the SEP also created training programmes both on line and on site for teachers, school leaders and supervisors. In January 2018, a set of 19 online training courses was made available for teachers, supervisors and school leaders to take ownership of the new curriculum. Two courses, partly online and *in situ*, were designed to help school leaders and supervisors understand the implications of the new curriculum had for their role in students' learning progression. The *in-situ* training modules were designed with and guaranteed by each federal entity. According to the SEP, as of June 2018, 900 000 professionals had signed up for the online course, 1.2 million teachers had at least received the methodological guides from the “Key Learning Outcomes” collection, and 15 000 supervisors had been trained. Some teachers also reported having access to training with *in-situ* sessions and were supposed to transfer the acquired knowledge to their colleagues.

Steering a large and complex education system, the SEP and its local counterparts succeeded in elaborating a curriculum aligned with their ambitions for Mexico's students and in operationalising some significant parts of it, including the education material, initial support and training for schools and their staff, all of which on a very tight schedule. All in all, Mexico has been quite consistent in extracting best practices from international evidence and blending them with its national priorities for education to design its new curriculum. The curriculum structure and content indeed align with a number of key principles that OECD member countries have deduced from their own experience with curricular reform design. Among these principles, Mexico has especially taken into account the following: design the curriculum around students and their learning; include challenging topics and enable deep thinking and reflection; focus on a relatively small number of topics in each grade and build upon their potential overlap to

ensure deep learning; sequence topics so they reflect the logic of the academic discipline on which they draw, enabling progression from basic to more advanced (OECD, 2018<sup>[4]</sup>).

There can be a large gap between designing a curriculum and realising it in the classroom, however. This is at the core of the following analysis of the progress made and remaining challenges in the implementation of the curricular reform.

## Recommendations for future policy development and implementation

Overall, the design for Mexico's curriculum reform aligns with the best international practices and the vision the country set for its education system (see Box 3.4). The efforts to engage with stakeholders from diverse corners of the education system are commendable and could contribute to an apparently high-quality curriculum, while the education authorities proved extremely skilful at managing large-scale projects such as the production of new instructional material on a tight schedule.

The new curriculum is being implemented in a sequenced manner since August 2018, which leaves time before its effects can be observed in the classroom and especially, on student learning. While some elements in the design of the curriculum could be refined or enhanced, **education authorities in Mexico should focus their efforts on providing the support necessary to accompany students, educators and school communities as well as authorities at lower levels of government to take ownership of this new curriculum and implement it properly.**

To do so, the SEP and its counterparts at the state level could consider providing support for teachers and schools in the short term and rethinking educator training for the long run. Although curricular autonomy was the only component that was piloted, educational authorities could take the time to evaluate the pilot schools' experience (those who tested it during the 2017/18 school year) and to adjust the implementation process and/or the curriculum itself based on the lessons these schools learnt. Educational authorities should provide extra support to schools in implementing the new curriculum, as they otherwise risk losing support from the educational community. To improve the existing initiatives, Mexico might consider taking action in the following areas: i) support teachers and school leaders to take ownership of the new curriculum; and ii) respect the timing and collaboration required for effective curriculum implementation.

### *Prioritise investment in teachers' and school leaders' capacity to implement the new curriculum*

The new curriculum is facing an education workforce that apparently considers it lacks the training and support to take ownership and effectively translate the curriculum into better learning. While on visit to Mexico, the OECD team was told by some teachers, school leaders and education experts that there were some instances in which school staff was not sufficiently prepared to start teaching the new curriculum in September 2018, given the lack of effective training. These arguments were presented especially with regards to socioemotional skills and education (a brand-new section of the new curriculum).

Traditionally, across countries, curricula have tended to be designed outside of schools and provided to them as self-contained products through in-service teacher training. This created major gaps between the intended curriculum and the reality of what was implemented in most countries. Alternative approaches that see curricula as a constant learning process for education staff seem to be a better fit to avoid implementation

failures (Sahlberg, 2009<sup>[54]</sup>). Without proper attention, a new curriculum may not be implemented for a range of reasons: local stakeholders, including teachers, may refuse it; the teaching staff may not know how to teach the new content because neither their initial nor continuous training prepared them for it; it may get dismissed in favour of the content that gets assessed through student evaluations.

Mastering a curriculum takes time, especially when the learning philosophy changes from the traditional knowledge transfer to teacher-learner collaboration (Rogan and Grayson, 2003<sup>[55]</sup>). Teachers and other school staff may require additional support, especially in the first years, to grasp the new teaching philosophy and manage the new contents (INEE, 2018<sup>[56]</sup>). Yet in Mexico, the short timeline for the new curriculum implementation made even more pressing the need for professional flexibility and support mechanisms. The support structures were not widely in place by the end of the 2017/18 school year, whereas the curriculum was supposed to start being implemented in all primary schools in August 2018. In the case of socioemotional education, the teachers and school leaders interviewed by the OECD were convinced of the usefulness of developing non-cognitive skills in their students. However, they generally agreed that dedicating a half-hour or even an hour per week was already very difficult for them to achieve. It was estimated that teachers in post did not have the time necessary to prepare and give another class, and schools cannot afford to devote one specific teacher to the task. When it was suggested that non-cognitive skills could also be developed through other subjects, one pedagogical team highlighted that it was still difficult for teachers to grasp which activities develop non-cognitive skills, even after reading the SEP's suggestions in the matter (SEP, 2017<sup>[23]</sup>).

Mexico should provide more support for its teachers and school leaders in taking ownership of the new curriculum. In this regard, Mexican authorities might consider the following:

- **Provide additional support at school level in the short term for teachers and school leaders to master the new curriculum and the new pedagogical approaches it demands.** This includes more personalised training, feedback, and pedagogical support adapted to educators' needs and schedule and that are school- and team-based. Teachers need to further develop a more in-depth understanding not only of the content but especially of how to deliver the new types of skills and competencies included in the new curricula. Following an initial strategy that has introduced the curriculum reform through information technology (IT) training for teachers, technology could be further leveraged to help Mexico's teachers on a large scale during at least the first years of implementation. Individual teacher blogs and fora already exist where education professionals share some of their pedagogical practices. The SEP could make a crowdsourcing platform available for teachers in all of Mexico to share both their pedagogical activities and evaluation methods with the new curriculum. Although the educators who used the material and online training modules offered by the SEP appreciated the effort made by the government, the teachers and school leaders interviewed by the OECD reported the support was not enough to feel comfortable with the new curriculum. The teachers who participated in the more intense, *in-situ* training seemed satisfied with them, but it was not clear how they were planning on transferring their new knowledge to their colleagues.
- **Implement the Technical Support Service to Schools (*Servicio de Asistencia Técnica a la Escuela, SATE*) aligned with the curricular reform in all schools.**

The delay in the implementation of the SATE has delayed the opportunity for schools to have pedagogical support agents ready to assist teachers with the new curriculum. School improvement support services such as the SATE can benefit teachers who feel less at ease with the new curriculum and could spur collaboration within and across schools. Other existing support models could be expanded or transposed between states, which allow educators to collaborate, train and give each other advice across schools. For instance, Puebla's supervisor and teacher councils allow educators to discuss how to better implement new policy measures and more generally, to exchange good pedagogical practices. Bringing strong support to educators has proven essential in the implementation of new curricula in other countries. In Wales, a country that is also in the process of enacting a new curriculum, the development and implementation strategy recognises the importance of alignment across key policies and actors. The curricular reform is therefore accompanied by supporting programmes towards the professional learning of teachers and school leaders and in establishing a constructive accountability culture (Donaldson, 2015<sub>[19]</sub>). This recommendation aligns with the recommendation made in Chapter 4 about prioritising continuous professional development and the SATE to enhance the skills of education professionals.

- **Rethink teacher and school leader training by building on the existing strategies for continuous professional development in the medium to long run.** Pedagogical leadership is required to drive the new curricular approach, which implies that supervisors, school leaders and teachers must have solid leadership and planning skills. Such skills develop with practice when a professional both understands the theory and can apply it in her work. In order to respond to the pedagogical challenges posed by curricular changes, teachers and leaders need to develop these skills with professional efficiency so they can quickly master new curricula and thus be prepared to adapt more easily to future curricular change. In Mexico, this could be achieved by making sure continuous professional development is effectively and easily available for teachers and school leaders to develop their planning, leadership and pedagogical skills. Currently, continuous professional development is the responsibility of the states, but a national professional development strategy was developed to bring coherence to professional training policies nationally. Therefore, central authorities and federal entities could reach an agreement to make the national professional development strategy more systematic and concrete in all states.

### ***Give schools the time and agency required for effective curriculum implementation***

Mexico adapted a number of curriculum design principles that were agreed upon internationally (OECD, 2018<sub>[4]</sub>). As mentioned, curricular autonomy was piloted in some schools during the 2017/18 school year. Some conclusions were drawn about the conditions for success in the participating schools but it remains unclear what actions were taken to reinforce schools' capacity to assume this autonomy, for instance. Mexico would have benefitted from taking into account the lessons learnt from the pilot for curricular autonomy and from piloting the entire curriculum – not just curricular autonomy – before the launch at the system level. This would have yielded valuable information on the particularities of implementation of these components at each level. The risk of not having this information is that some of the difficulties with curriculum

autonomy and other curricular components (such as socioemotional skills and education) as reported by pilot schools may repeat at a greater scale without a solution.

Curriculum design and change principles from international evidence and experience refer to processes and interactions that contribute to enact the curricular content, such as teacher agency, authenticity, interrelation, flexibility and engagement (Box 3.4). While it is still too early in the implementation process to know whether some of these principles have been adopted, these can help guide the next stages of curriculum changes in Mexico as follows:

- **Allow more time for education stakeholders to test and adjust the curriculum.** Leaving more time and accompanying the implementation for several years enables school leaders and teachers to master the curriculum and to provide feedback in case some elements do not work as planned. This, in turn, gives the curriculum greater chances to influence student learning. With more time, educators could, for instance, discuss assessment and their alignment with the objectives set for key learning outcomes. Other countries undertaking large-scale curriculum reforms are making sure that teachers, school leaders and other system leaders have the time to take ownership of the new curriculum. In Finland for instance, curricular reforms are undertaken approximately every decade and are informed by a national consultation. The overall reform strategy included determining the actions required to develop the curriculum; identifying the new or enhanced skills required for teachers; and providing standards to clarify the curriculum to practitioners (Finnish National Agency for Education, 2014<sup>[16]</sup>). In Wales, the curriculum shaped by pilot schools will be made available by April 2019 for public feedback. A final version will be published in January 2020, and implementation throughout Wales completed by 2022 (Welsh Government, 2015<sup>[18]</sup>).
- **Give more agency and support to school actors and subnational authorities in adapting and implementing the curriculum.** Mexico led a nation-wide consultation, reaching a remarkable number of education stakeholders. Another way to gain in efficiency and effectiveness may be to give more agency to school actors and subnational authorities in adapting and implementing the curriculum. This might involve reconsidering the degree of adaptability of the curriculum. Realising curriculum in classrooms takes time, resources and collaboration. These may be difficult to provide and co-ordinate from a central position like the SEP's, especially in a large and complex system like Mexico's. Many decentralised countries allow their lower levels of government to adapt their own version of the curriculum, although respecting national guidelines on key learning outcomes for instance. These guidelines often include the vision of the country's education and the corresponding goals for learning, philosophy, compulsory content, high learning standards and key elements to reach them.

### Box 3.4. Curriculum design principles for change, OECD Education 2030

The Education 2030 initiative is working hand in hand with country members to develop design principles for changes in curricula. Some principles become more or less significant depending on the country's context and on its progress in the curriculum design. As regards the concepts, content and topics, it is worth considering:

- Student agency: the curriculum should be designed around students to motivate them and recognise their prior knowledge, skills, attitudes and values.
- Rigour: topics should be challenging and enable deep thinking and reflection.
- Focus: a relatively small number of topics should be introduced in each grade to ensure the depth and quality of students' learning. Topics may overlap in order to reinforce key concepts.
- Coherence: topics should be sequenced to reflect the logic of the academic discipline on which they draw, enabling progression from basic to more advanced concepts through stages and age levels.
- Alignment: the curriculum should be well-aligned with teaching and assessment practices, while the technologies to assess many of the desired outcomes do not yet exist, different assessment practices might be needed for different purposes. New assessment methods should be developed that value student outcomes and actions that cannot always be measured.
- Choice: students should be offered a diverse range of topic and project options, and the opportunity to suggest their own topics and projects, with the support to make well-informed choices.

Regarding the processes and interactions that enact the curricular content, the following principles should guide their design:

- Teacher agency: teachers should be empowered to use their professional knowledge, skills and expertise to deliver the curriculum effectively.
- Authenticity: learners should be able to link their learning experiences to the real world and have a sense of purpose in their learning. This requires interdisciplinary and collaborative learning alongside mastery of discipline-based knowledge.
- Interrelation: learners should be given opportunities to discover how a topic or concept can link and connect to other topics or concepts within and across disciplines, and with real life outside of school.
- Flexibility: the concept of "curriculum" should be developed from "predetermined and static" to "adaptable and dynamic". Schools and teachers should be able to update and align the curriculum to reflect evolving societal requirements as well as individual learning needs.
- Engagement: teachers, students and other relevant stakeholders should be involved early in the development of the curriculum, to ensure their ownership for implementation.

Source: OECD (2018<sup>[4]</sup>) *The Future of Education and Skills - Education 2030*, [http://www.oecd.org/education/2030/E2030%20Position%20Paper%20\(05.04.2018\).pdf](http://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf) (accessed on 04 September 2018).

Finland's national curriculum is only designed as a set of guidelines that local municipalities and schools respect while adapting their curriculum according to their own individual context (Hargreaves, Halász and Pont, 2008<sup>[57]</sup>). Wales follows a different model, where school and community actors are involved in the curriculum design and given both the responsibilities and the means to implement it in their school. The Welsh government has recognised that successful and sustained realisation of its ambitions will require a move away from a centrally driven model of change to one that promotes local ownership and entrusts key aspects of development to the regional and local authorities and schools. The curriculum is being developed through a process of co-construction with a group of pioneer schools but there is already wide communication on its purposes. At the school level, a particular focus on the role of school principals aims to ensure that they are well versed in the implementation of the curriculum, in the specific training required for teachers and in providing support to introduce learning and teaching that aligns to the curriculum.

## Notes

<sup>1</sup> Examples of the challenges and solutions shared by a number of other countries can be found in publications by OECD Education 2030 work (see OECD (2018<sup>[4]</sup>) and upcoming publications).



## References

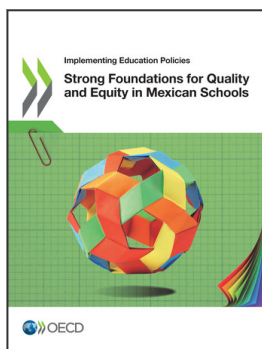
- Avvisati, F. (2017), “Does the quality of learning outcomes fall when education expands to include more disadvantaged students?”, *PISA in Focus*, No. 75, OECD Publishing, Paris, <https://doi.org/10.1787/06c8a756-en> (accessed on 4 September 2018). [9]
- Calero Martínez, J. (2009), “Resultados educativos y autonomía: Un análisis basado en PISA 2006”, in de Esteban Villar, M. and G. de Esteban Villar (eds.), *La Autonomía de los Centros Educativos*, Consejería de Educación Comunidad de Madrid, Madrid, <http://www.madrid.org/bvirtual/BVCM001907.pdf> (accessed on 5 September 2018). [42]
- Cedefop (2016), *Application of Learning Outcomes Approaches across Europe*, Publications Office of the European Union, Luxembourg, <http://dx.doi.org/10.2801/735711>. [32]
- Cedefop (2014), *Terminology of European Education and Training Policy*, Publication Office of the European Union, Luxembourg, <http://dx.doi.org/10.2801/15877>. [27]
- Cedefop (2008), *Terminology of European Education and Training Policy: A Selection of 100 Key Terms*, Office for Official Publications of the European Communities, Luxembourg, [http://www.cedefop.europa.eu/files/4064\\_en.pdf](http://www.cedefop.europa.eu/files/4064_en.pdf) (accessed on 5 September 2018). [38]
- Chuquilin Cubas, J. and M. Zagaceta Sarmiento (2017), “El currículo de la educación básica en tiempos de transformaciones”, *Revista Mexicana de Investigación Educativa*, Vol. 22/72, pp. 109-134, <http://www.scielo.org.mx/pdf/rmie/v22n72/1405-6666-rmie-22-72-00109.pdf> (accessed on 5 September 2018). [12]
- CIDE-PIPE (2016), *Consulta sobre el Modelo Educativo 2016*, Centro de Investigación y Docencia Económicas (CIDE). [47]
- CONAPASE (n.d.), *Opinion Acerca de los Fines de la Educacion en el Modelo Educativo y la Propuesta Curricular para la Educacion Obligatoria 2016*, [http://consejoscolares.sep.gob.mx/es/conapase/Opinion\\_acerca\\_de\\_los\\_Fines\\_de\\_la\\_Educacion\\_el\\_Modelo\\_Educativo\\_y\\_la\\_Propuesta\\_Curricular\\_para\\_la\\_Educacion\\_Obligatoria\\_2016](http://consejoscolares.sep.gob.mx/es/conapase/Opinion_acerca_de_los_Fines_de_la_Educacion_el_Modelo_Educativo_y_la_Propuesta_Curricular_para_la_Educacion_Obligatoria_2016) (accessed on 26 July 2018). [48]
- Delajara, M. and D. Graña (2017), “Intergenerational social mobility in Mexico and its regions”, No. 06/2017, Centro de Estudios Espinosa Yglesias, Mexico City, <https://ceey.org.mx/wp-content/uploads/2018/06/06-Delajara-Gra%C3%B1a-2017.pdf> (accessed on 11 September 2018). [3]
- Delors, J. (1996), *Learning: The Treasure Within. Report Highlights*, UNESCO, Paris, <http://unesdoc.unesco.org/images/0010/001095/109590eo.pdf> (accessed on 4 July 2018). [21]
- Donaldson, G. (2015), *Successful Futures Independent Review of Curriculum and Assessment Arrangements in Wales*, Welsh Government, Cardiff, [http://dera.ioe.ac.uk/22165/2/150225-successful-futures-en\\_Redacted.pdf](http://dera.ioe.ac.uk/22165/2/150225-successful-futures-en_Redacted.pdf) (accessed on 20 July 2017). [19]

- Finnish National Agency for Education (2014), *New National Core Curriculum for Basic Education*, Finnish National Agency for Education, [https://www.oph.fi/english/curricula\\_and\\_qualifications/basic\\_education/curricula\\_2014](https://www.oph.fi/english/curricula_and_qualifications/basic_education/curricula_2014) (accessed on 5 September 2018). [16]
- Fullan, M. (2015), *The NEW Meaning of Educational Change*, Teachers College Press, New York. [50]
- González-Rubio, P. (2018), “Un currículum incluyente para la escuela que queremos”, *Animal Político*, <https://www.animalpolitico.com/blogueros-aprender-es-mi-derecho/2018/03/21/un-curriculum-incluyente-para-la-escuela-que-queremos/> (accessed on 5 September 2018). [51]
- Hargreaves, A., G. Halász and B. Pont (2008), “The Finnish approach to system leadership”, in Hopkins, D., D. Nusche and B. Pont (eds.), *Improving School Leadership, Volume 2: Case Studies on System Leadership*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264039551-5-en>. [57]
- Hattie, J. (2017), *Visible Learning plus 250+ Influences on Student Achievement*, Visible learning plus, [https://us.corwin.com/sites/default/files/250\\_influences\\_-\\_7.18.18.pdf](https://us.corwin.com/sites/default/files/250_influences_-_7.18.18.pdf) (accessed on 5 September 2018). [34]
- Hopkins, D., D. Nusche and B. Pont (eds.) (2008), *Improving School Leadership, Volume 2: Case Studies on System Leadership*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264039551-en>. [17]
- INEE (2018), *La Educación Obligatoria en México - Informe 2018*, National Institute for Education Evaluation, Mexico City, [https://www.inee.edu.mx/portalweb/informe2018/04\\_informe/capitulo\\_05.html](https://www.inee.edu.mx/portalweb/informe2018/04_informe/capitulo_05.html) (accessed on 5 September 2018). [56]
- INEE (2016), *Planea Resultados Nacionales 2015*, National Institute for Education Evaluation (INEE), Mexico City, <http://planea.sep.gob.mx/> (accessed on 5 September 2018). [6]
- Leithwood, K. (2010), “Turning around underperforming school systems - Guidelines for district leaders”, No. 3, College of Alberta School Superintendents, Edmonton, <http://www.cass.ab.ca> (accessed on 5 September 2018). [37]
- Looney, J., G. Siemens and R. Miller (2011), “Assessment competency: Knowing what you know and learning analytics - It is time for a breakthrough”, *Promethean Thinking Deeper Research Paper*, No. 3, Promethean Education Strategy Group, [http://www.21digitalclass.com/uploads/4/7/2/9/47298253/c2\\_-\\_assessment\\_competency\\_-\\_knowing\\_what\\_you\\_know\\_and\\_learning\\_analytics..pdf](http://www.21digitalclass.com/uploads/4/7/2/9/47298253/c2_-_assessment_competency_-_knowing_what_you_know_and_learning_analytics..pdf) (accessed on 5 September 2018). [33]
- OECD (2018), *Curriculum Flexibility and Autonomy in Portugal: An OECD Review*, OECD, Paris, <https://www.oecd.org/education/2030/Curriculum-Flexibility-and-Autonomy-in-Portugal-an-OECD-Review.pdf> (accessed on 5 September 2018). [46]
- OECD (2018), *Skills in Ibero-America*, OECD, Paris, <http://www.oecd.org/pisa/sitedocument/Skills-in-Ibero-America-Insights-from-PISA-2015.pdf> (accessed on 5 September 2018). [8]

- OECD (2018), *The Future of Education and Skills - Education 2030*, OECD Publishing, Paris, [4]  
[http://www.oecd.org/education/2030/E2030%20Position%20Paper%20\(05.04.2018\).pdf](http://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf)  
 (accessed on 4 September 2018).
- OECD (2017), *OECD Economic Surveys: Mexico 2017*, OECD Publishing, Paris, [2]  
[http://dx.doi.org/10.1787/eco\\_surveys-mex-2017-en](http://dx.doi.org/10.1787/eco_surveys-mex-2017-en).
- OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD [5]  
 Publishing, Paris, <http://dx.doi.org/10.1787/9789264266490-en>.
- OECD (2016), *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*, [39]  
 PISA, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264267510-en>.
- OECD (2013), *Synergies for Better Learning: An International Perspective on Evaluation and [35]  
 Assessment*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing,  
 Paris, <http://dx.doi.org/10.1787/9789264190658-en>.
- OECD (2012), *Equity and Quality in Education: Supporting Disadvantaged Students and [1]  
 Schools*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264130852-en>.
- Ortega Estrada, F. (2017), “Principios e implicaciones del Nuevo Modelo Educativo”, *Revista [43]  
 Latinoamericana de Estudios Educativos*, Vol. XLVII/1, pp. 43-62,  
<http://www.redalyc.org/html/270/27050422003/> (accessed on 5 September 2018).
- Pérez, S. (2017), “México podría ser país puntero en educación emocional: investigador”, *Ibero [24]  
 Mexico*, <http://www.ibero.mx/prensa/mexico-podria-ser-pais-puntero-en-educacion-emocional-investigador>.
- Pont, B., D. Nusche and H. Moorman (2008), *Improving School Leadership, Volume I: Policy [36]  
 and Practice*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264044715-en>.
- Radinger, T. et al. (2018), *OECD Reviews of School Resources: Colombia 2018*, OECD Reviews [44]  
 of School Resources, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264303751-en>.
- Riley, R. and A. Coleman (2011), “Turning the page on the equity debate in education: How to [28]  
 give all children a real opportunity”, *American Educator*, Vol. 35/1, pp. 26-30,  
<https://eric.ed.gov/?id=EJ920515> (accessed on 5 September 2018).
- Rogan, J. and D. Grayson (2003), “Towards a theory of curriculum implementation with [55]  
 particular reference to science education in developing countries”, *International Journal of  
 Science Education*, Vol. 25/10, pp. 1171-1204,  
<http://dx.doi.org/10.1080/09500690210145819>.
- Ruiz López, S. and H. Armendáriz Ponce (2017), *La Práctica Docente con la Reforma [53]  
 Curricular del 2011*, Congreso Nacional de Investigación Educativa, San Luis Potosí,  
<http://www.comie.org.mx/congreso/memoriaelectronica/v14/doc/1162.pdf> (accessed on  
 5 September 2018).

- Sahlberg, P. (2009), *Curriculum Change as Learning: In Search of Better Implementation*, [54]  
<https://www.sac.smm.lt/bmt/wp-content/uploads/2009/09/1-Passi-Sahlberg-Curriculum-change-as-learning.pdf> (accessed on 24 May 2018).
- Sánchez Regalado, N. (2012), “El currículo de la Educación Básica en Mexico: Un proyecto educativo flexible para la atención a la diversidad y el fortalecimiento de la sociedad democrática”, *Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, Vol. 10/4, pp. 150-163, <http://www.redalyc.org/html/551/55124841011/> (accessed on 5 September 2018). [10]
- Schleicher, A. (2018), *What Knowledge, Skills, Attitudes and Values Will Today’s Students Need to Thrive and Shape Their World?*, OECD Publishing, Paris, [26]  
<https://www.slideshare.net/OECD/EDU/what-knowledge-skills-attitudes-and-values-will-todays-students-need-to-thrive-and-shape-their-world>.
- SEP (2018), *ACUERDO Número 12/05/18 por el que se Establecen las Normas Generales para la Evaluación de los Aprendizajes Esperados, Acreditación, Regularización, Promoción y Certificación de los Educandos de la Educación Básica*, Diario Oficial de la Federación, [31]  
[https://sep.gob.mx/es/sep1/Acuerdos\\_publicados\\_en\\_el\\_DOF\\_2018](https://sep.gob.mx/es/sep1/Acuerdos_publicados_en_el_DOF_2018) (accessed on 5 September 2018).
- SEP (2018), *Evidencias de las Escuelas que Participan en la Fase 0 de Autonomía Curricular Educación Primaria*, Secretariat of Public Education, Mexico City, [52]  
[https://basica.sep.gob.mx/multimedia/RSC/BASICA/Documento/201805/201805-RSC-4ryiYGLWYg-Primaria\\_evidencias\\_autonoma.pdf](https://basica.sep.gob.mx/multimedia/RSC/BASICA/Documento/201805/201805-RSC-4ryiYGLWYg-Primaria_evidencias_autonoma.pdf).
- SEP (2018), *Planea Resultados 2017*, Secretariat of Public Education, Mexico City. [7]
- SEP (2017), *Aprendizajes Clave*, Secretariat of Public Education, Mexico City, [22]  
<https://www.aprendizajesclave.sep.gob.mx/> (accessed on 5 September 2018).
- SEP (ed.) (2017), *Aprendizajes Clave para la Educación Integral - Plan y Programas de Estudio para la Educación Básica Lengua Materna Español*, Secretariat of Public Education, Mexico City, [30]  
[https://www.aprendizajesclave.sep.gob.mx/descargables/LENGUA\\_MATERNA\\_ESPANOL.pdf](https://www.aprendizajesclave.sep.gob.mx/descargables/LENGUA_MATERNA_ESPANOL.pdf) (accessed on 17 September 2018).
- SEP (2017), *Aprendizajes Clave para la Educación Integral, Educación Socioemocional y Tutoría*, Secretariat of Public Education, Mexico City, [23]  
[https://www.aprendizajesclave.sep.gob.mx/descargables/EDUCACION\\_SOCIOEMOCIONAL.pdf](https://www.aprendizajesclave.sep.gob.mx/descargables/EDUCACION_SOCIOEMOCIONAL.pdf) (accessed on 5 September 2018).
- SEP (2017), *Educación Inicial: Un Buen Comienzo. Programa para la Educación de las Niñas y los Niños de 0 a 3 Años*, Secretaría de Educación Pública (SEP), Mexico City, [29]  
[https://www.aprendizajesclave.sep.gob.mx/descargables/biblioteca/inicial/1Educacion-Inicial\\_Digital.pdf](https://www.aprendizajesclave.sep.gob.mx/descargables/biblioteca/inicial/1Educacion-Inicial_Digital.pdf) (accessed on 10 October 2018).
- SEP (2017), “Innovaciones del Nuevo Modelo Educativo”, in *Nuevo Modelo Educativo para la educación obligatoria*, Secretariat of Public Education, Mexico City. [11]

- SEP (2017), *Los Fines de la Educación en el Siglo XXI*, Secretariat of Public Education, Mexico City, <https://www.gob.mx/nuevomodeloeducativo/documentos/carta-los-fines-de-la-educacion-en-el-siglo-xxi-2>. [20]
- SEP (2017), *Nuevo Modelo para la Educación Obligatoria*, Secretariat of Public Education, Mexico City. [15]
- SEP (2017), *Ruta de Implementación del Nuevo Modelo Educativo*, Secretariat of Public Education, Mexico City, [https://www.gob.mx/cms/uploads/attachment/file/232636/10\\_Ruta\\_de\\_implementacion\\_del\\_modelo\\_educativo\\_DIGITAL\\_re\\_FINAL\\_2017.pdf](https://www.gob.mx/cms/uploads/attachment/file/232636/10_Ruta_de_implementacion_del_modelo_educativo_DIGITAL_re_FINAL_2017.pdf). [49]
- Sinnema, C. (2017), *Designing a national curriculum with enactment in mind - The New Curriculum for Wales: a Discussion Paper*, University of Auckland, Auckland. [40]
- Sinnema, C. (2016), “The ebb and flow of curricular autonomy - Balance between local freedom and national prescription in curricula”, in Wyse, D., L. Hayward and J. Pandya (eds.), *The SAGE Handbook of Curriculum, Pedagogy and Assessment: Two Volume Set*, SAGE Publications Ltd, London, <http://dx.doi.org/10.4135/9781473921405.n59>. [45]
- Steinberg, M. (2014), “Does greater autonomy improve school performance? Evidence from a regression discontinuity analysis in Chicago”, *Education Finance and Policy*, Vol. 9/1, pp. 1-35, [http://dx.doi.org/10.1162/EDFP\\_a\\_00118](http://dx.doi.org/10.1162/EDFP_a_00118). [41]
- Torres Hernández, R. et al. (2018), *Congreso Nacional de Investigación Educativa (COMIE)*, COMIE, San Luis Potosí, <http://www.comie.org.mx/congreso/memoriaelectronica/v14/doc/simposios/2480.pdf> (accessed on 5 September 2018). [13]
- van den Akker, J. (2007), “Curriculum design research”, in Plomp, T. and N. Nieveen (eds.), *An Introduction to Educational Design Research*, SLO, Enschede. [14]
- Welsh Government (2015), *Qualified for Life - A Curriculum for Wales, A Curriculum for Life*, OGL, Cardiff, <https://gov.wales/docs/dcells/publications/151021-a-curriculum-for-wales-a-curriculum-for-life-en.pdf> (accessed on 5 September 2018). [18]
- World Economic Forum (2016), *New Vision for Education: Fostering Social and Emotional Learning through Technology*, World Economic Forum, Geneva, [http://www3.weforum.org/docs/WEF\\_New\\_Vision\\_for\\_Education.pdf](http://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf) (accessed on 11 September 2018). [25]



**From:**  
**Strong Foundations for Quality and Equity in Mexican Schools**

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264312548-en>

**Please cite this chapter as:**

OECD (2019), “Providing 21st century learning to all students”, in *Strong Foundations for Quality and Equity in Mexican Schools*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/52429719-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).