J Educ Change (2016) 17:411–436
DOI 10.1007/s10833-016-9286-4

Large scale pedagogical transformation as widespread cultural change in Mexican public schools

Santiago Rincón-Gallardo[1]

Published online: 18 November 2016

Abstract This article examines how and under what conditions a new pedagogy can spread at scale using the Learning Community Project (LCP) in Mexico as a case study. Started as a small-scale, grassroots pedagogical change initiative in a handful of public schools, LCP evolved over an 8-year period into a national policy that spread its pedagogy of tutorial relationships to 9000 schools. The author conceptualizes large scale pedagogical transformation as a process of widespread cultural change that occurs when a new pedagogy developed by a critical community is adopted by movements who disseminate it in three arenas: the social, political, and pedagogical arenas. The author examines the scale reached by LCP relative to the dimensions of spread, depth, ownership, and sustainability proposed by Coburn (Educ Res 32(6):3–12, 2003). It then extracts seven principles to change pedagogy at scale: 1) Turn 'disadvantage' into possibility; 2) Establish a clear purpose centered on student learning and a compelling vision of effective pedagogy; 3) Directly change the instructional core; 4) Create multiple opportunities to observe, practice, and refine the new pedagogy; 5) Attract the support of system leaders, or become one; 6) Change the surrounding institutional environment from the inside out; and 7) Keep a strong link between design and execution.

Keywords Pedagogical change · Instructional change · Large-scale change · Cultural change · Instructional core · Instructional innovation

This article examines how and under what conditions a pedagogy of tutorial relationships within learning communities spread to thousands of Mexican public schools between 2004 and 2012. The Learning Community Project (LCP) started in 2004 as a small-scale pedagogical change initiative in a handful of rural schools.

✉ Santiago Rincón-Gallardo
santiago.rincon.gallardo@utoronto.ca

[1] Ontario Institute for Studies in Education, Toronto, ON, Canada

After some years of grassroots spread to dozens of schools, LCP's pedagogy was adopted by the Ministry of Education and further spread to the 9000 lowest-performing schools in the country. Between 2009 and 2012, the schools that adopted this new pedagogy significantly increased the proportion of students scoring at "good" and "excellent" levels in the national standardized test, at a faster pace than schools that didn't, and reaching or surpassing their more privileged counterparts.

The author, a former leader of LCP and later an external researcher and consultant to the team that extended its new pedagogy to thousands of schools, combines his insider and outsider knowledge of LCP with an analysis of existing documents, interviews and classroom observations to examine the history of LCP and how it was brought to scale. The paper has two analytical sections. The first examines LCP against the four inter-related dimensions of scale proposed by Coburn (2003)—spread, depth, shift in ownership, and sustainability. The second is a broader examination of the conditions and strategies under which LCP's pedagogy spread to thousands of schools over an eight-year period. Using a framework that conceptualizes large scale instructional improvement as widespread cultural change (Rincón-Gallardo 2015; Rochon 1998), seven key principles to bring effective pedagogy to scale are extracted from LCP's development.

The paper starts with a depiction of LCP's core pedagogy of tutorial relationships as observed in classrooms, followed by the history and the larger policy context where LCP emerged and developed. Next come the theoretical foundations and methodology underpinning the examination of LCP presented here. LCP's 'scale' (Coburn 2003) is then examined (Coburn 2003) and seven key principles to bring an effective pedagogy to scale are identified and discussed.

The Learning Community Project in Mexico (2004–2012)

A Mexican learning community in action

It is a sunny morning in the community of *El Caracol*, a small, rural town of about 2000 inhabitants, located some 150 km away from the nearest city. It takes a three hour ride to get here from the city, the first 90 km on state highway and the remaining 60 on a slow, bumpy dirt road. Today, the small middle school of El Caracol is hosting a learning exchange with two other schools from neighboring communities. Tables and chairs are spread throughout the patio and the basketball court, as well as inside the two rooms that make the school. Students and adults alike work in pairs or small groups. Each person has picked a topic of study from a larger catalogue made up of topics that at least someone in the group has previously studied and mastered. Every person is paired up with at least one tutor, an adult or a student who masters the topic chosen by the tutee. Topics include, among others, math problems, poems, short stories, texts in English, Science or History lessons. Although most topics are taken from the national curriculum, other topics such as migration, farming, architecture, hydraulics, etc., have been added to the catalogue of topics available here, based on personal interests expressed by the students. Students and teachers alike have been looking forward to this school exchange,

which broadens the pool of topics to pick from relative to what is usually available in their own school.

Seamlessly throughout the day, young people and adults alternate between acting as students and as tutors. Sometimes adults take the role of tutors to young people, sometimes kids serve as tutors to their peers, and yet other times, students are tutors to the adults in the group. At any given moment, some students write down in their notebooks information they consider relevant or accounts of their learning process, others create slides in preparation for a public presentation, some read, others walk around to search for a book or a dictionary from the school library, or to use one of the three computers available in the school. Where a tutor and a student are working together—whether the tutor is a teacher or a student—they sit next to each other and talk about the text the student is reading, the math problem he is solving or the work he is producing. There is a constant buzz created by the voices of tutors and students when they talk about their work. At the same time everyone seems to be highly focused.

Toward the end of the day, parents and other members of the community come to the school to see some students present major takeaways of what and how they have been learning. The presentations are followed by questions from the audience and further discussion by the presenters. In El Caracol, public demonstrations and school exchanges such as the one happening today have become a reason for community celebration. Once a round of public presentations is completed, students, teachers and parents come together to share food, music, and sport activities coordinated by the parents' association of El Caracol.

This is, in a nutshell, a Mexican learning community in action. Its main purpose, shared in common with other learning communities across the country, is to develop among young people and adults the skill to learn independently through written texts. The pedagogical practice underlying these learning communities is grounded on a simple axiom that states that powerful learning occurs where the interest of a learner is matched with the capacity of a tutor (Cámara 2003). To operationalize this basic axiom, tutors in a learning community offer to their students a collection of topics they have studied and mastered through inquiry undertaken in their own network of tutors. Each student chooses her topic from the catalogue of topics available in the group and develops an individual line of inquiry, at her own pace. Throughout the process, tutors engage in one-on-one dialogue with students, using their thoughts and questions as the basic material to help them build new meanings and solve problems. Rather than giving direct answers or instructions to a student, the role of a tutor is to understand how the student is making sense of her topic of study, and articulate questions or clues that will help her identify and correct her own misconceptions, come up with her own answers, and deepen her mastery of the topic at hand and the skill to learn independently. Students are expected to publicly demonstrate their mastery of the topics and their skill to learn independently in writing and in public presentations for their peers, their teachers and often community members. After their public demonstration, students are expected to serve as tutors to other students interested in the same topic. Over time, the knowledge constructed in this way constitutes a collective fund of knowledge available to the group and to anyone who visits the school—other students or adults

such as teachers, parents, administrators, or researchers. (City et al. 2012; Rincón-Gallardo and Elmore 2012).

Teachers and other adults who lead learning communities in schools learn the practice of tutoring the same way students do: by becoming students to tutors who master topics they are interested in learning and then practicing as tutors of others interested in learning the topics they master. In tutorial networks, teachers and students alike have permanent access to the practice of independent learning and tutoring, which is continuously modeled and practiced in the everyday activities of classrooms, during teacher professional learning and collaboration sessions, in exchanges and visits between schools, and in learning fairs organized locally or nationally (López and Rincón Gallardo 2003; Rincón-Gallardo 2012).

The learning community of El Caracol is one of thousands of public schools in Mexico that substantively transformed classroom pedagogy between 2004 and 2012. The rest of this section presents the context and history of LCP.

Context

The Learning Community Project was first introduced in the margins of the Mexican educational system, that is, in multi-grade schools located in small, scattered rural communities with less than 2500 inhabitants. While formal education services existed in these communities prior to LCP, they were very low quality and unable by design to respond to the multi-grade reality of these schools and the modes of life of small rural communities. *Telesecundaria* is the main modality of public middle-school (grades 7–9) available to the communities where LCP first took roots. Since the mid-1990s, Telesecundaria quickly spread across Mexico, when middle-school education was made compulsory in the country. It constitutes almost half of all Mexican public middle-schools, and attracts one fifth of the middle-school-age population (INEE 2014).

While it played a crucial role in expanding access to middle-school across the country, the main rationale for its expansion was low cost rather than quality (Santos 2001). Telesecundarias have historically had far fewer resources and less experienced, more mobile teachers than the other two modalities of public middle-school that exist in Mexico, which serve students with higher socio-economic status, in communities with lower degrees of marginalization (INEE 2015; Santos and Carvajal 2001). Unlike conventional public middle-schools in Mexico, where there is one teacher per subject matter, Telesecundarias have only one teacher per grade (INEE 2015). Curriculum materials and lessons are designed to provide instruction to each of the three middle-school grades separately. But since the mid-1990s, the expansion of Telesecundarias to increasingly smaller, more remote areas in the country was accompanied by a proliferation of schools with only one or two teachers for the three grades. These multi-grade schools constitute one fifth of the total number of Telesecundarias in the country (INEE 2015).

The general structure of classroom practice in Telesecundaria, at least until 2009, consisted of 50-min sessions for each subject matter. For the first 15 min, students watched a lesson on satellite TV, and in the remaining 35 min they completed textbook exercises. Once the session was over, the TV lesson for the next 50-min

lesson began. Teachers functioned mainly as administrators of time and prescribed textbook activities. Reportedly, the tasks for teachers became especially complicated in multi-grade Telesecundarias, where one or two teachers have to work with three grades simultaneously (Carvajal 2003; Rincón Gallardo et al. 2009).

National and international evaluations in the first decade of 2000 revealed that Telesecundarias were producing significantly lower levels of academic achievement than those in the other two modalities of public middle-school in Mexico, *Secundarias Generales* and *Secundarias Técnicas* (INEE 2006, 2007, 2008; Vidal and Díaz 2004). Because Telesecundarias were serving the most highly marginalized communities in the country, their low performance became a problem of educational equity, one of the two education priorities that Mexican governments, regardless of political affiliation, have consistently maintained over several decades.

The inadequacy for multi-grade environments of a model designed for middle-schools with at least one teacher per grade, a pedagogy that barely produced student learning and engagement, and the need of policy makers to find an effective solution to improve student achievement in Telesecundarias created a policy environment that was, if not entirely embracing, at least tolerant of radical departures from conventional practice such as the one offered by LCP.

A brief history of the Mexican learning communities

Learning communities such as the one in El Caracol were first developed in a handful of multi-grade elementary and middle-schools in a few states in Mexico between 2004 and 2008. With funding from local and international agencies, a small organization called Convivencia Educativa, A.C. (CEAC, at present Redes de Tutoría S.C.) launched a series of small-scale projects to turn conventional classrooms into learning communities (Cámara 2006). CEAC's founder Gabriel Cámara, a former Jesuit who completed doctoral studies at Harvard in the 1970s and developed close friendships with Ivan Illich and Paulo Freire, had developed for over three decades a personal philosophy and approach to educational change that was deeply influenced by these radical education thinkers. The other members of the organization had worked with Cámara in the development of an alternative education model for small rural and urban communities between 1996 and 2003 (See Cámara 2003; Cámara et al. 2003).

CEAC approached local Ministries of Education and education foundations to recruit voluntary teachers and offer them training and classroom-based support to turn their conventional classrooms into learning communities. Participating schools received every month a week-long visit from a CEAC coach. In the afternoons, the coach worked with teachers to model and develop skills as independent learners and tutors. During the day, the coach worked alongside teachers to model and introduce the new pedagogy of tutorial relationships in classrooms. This coaching and training had no cost for teachers or schools other than their willingness to join LCP and the after-school time needed to receive training from CEAC—funding in the initial stage of LCP came from foundation or local ministry grants.

Several of the small-scale projects initiated by CEAC between 2004 and 2008 waned after a few years, when external funding or political backing from State or

national agencies ended. But one of them, in the State of Zacatecas, took enough roots to continue and spread over time for approximately eight years. In 2004, four rural, multi-grade middle schools joined LCP. The project had secured international funding for one year, but in 2005 the Ministry of Education in Zacatecas and the school supervisors in the two regions where LCP was launched embraced the project and secured its continuation over the next four years. Between 2004 and 2008 LCP had grown from 4 to about 60 rural middle-schools, mostly through outreach and networking undertaken by teachers, school supervisors, and parents. School visits and exchanges, teachers' communities of practice, and classroom-based coaching from CEAC and from new coaches trained by CEAC were the main vehicles through which LCP's pedagogy of tutorial relationships took roots and spread to new schools within Zacatecas.

In parallel to the grassroots expansion of LCP, Dalila López, a senior leader from CEAC, was invited to join the Department of Innovation at the national Ministry of Education. The head of this department, Juan Martín Martínez, was personal advisor to the then Deputy Minister of Basic Education, Fernando González. González had been searching for a more radical alternative to transforming education in the margins of the system than the policy ideas that were available among his close advisors. Upon advice from Martínez, González visited the small learning community of San Ramón in Zacatecas on February 2008. In this one-room middle school with a single teacher and a dozen students, González saw a learning community in action. Impressed with the confidence and learning skills displayed by the students, he asked his advisors to help him spread the project to many more schools. That same year, a pilot project under the leadership of Dalila López was launched to expand LCP to a few hundred schools in eleven states. One year later, the Program for the Improvement of Educational Achievement (PEMLE), also led by López, was launched with the intention of disseminating LCP's pedagogy to the 9000 schools that had consistently shown low levels of student achievement according to the national standardized test ENLACE.

Shortly after joining the Department of Innovation, López started to bring former leaders of CEAC to her team. PEMLE expanded from a few hundred to thousands of schools in 3 years. By 2012, PEMLE schools had increased the proportion of students scoring at "good" and "excellent" levels in the national standardized test ENLACE at a similar or faster pace than schools not in the program, reaching or surpassing the latter (UPEPE 2012). A recent report prepared for the Ministry of Education (Azuma 2016) attributes to PEMLE the dramatic increases in student achievement observed in Telesecundarias between 2009 and 2013 (See Figs. 1, 2).[1]

[1] Figures 1 and 2 present the dramatic increase of levels of student achievement in *all* Telesecundarias, not only those that participated in PEMLE. A few considerations suggest that the overall improvement in Telesecundarias is the result, at least on a large extent, of PEMLE. (1) The most noticeable increases in student achievement occurred from 2009 to 2012, precisely the period when PEMLE was operating. (2) No other education program or policy in effect during those years had the goal and a strategy to deliberately change pedagogical practice in Telesecundarias. (3) Telesecundarias represented the majority of the public middle schools that participated in PEMLE (62 %, compared to 21 % Secundarias Generales and 17 % Secundarias Técnicas). The number of Telesecundarias directly served by PEMLE represents over 20 %, that is, a significant proportion, of all Telesecundarias in the country. (4) Student achievement of Telesecundarias in PEMLE improved at a faster pace than those not in the program

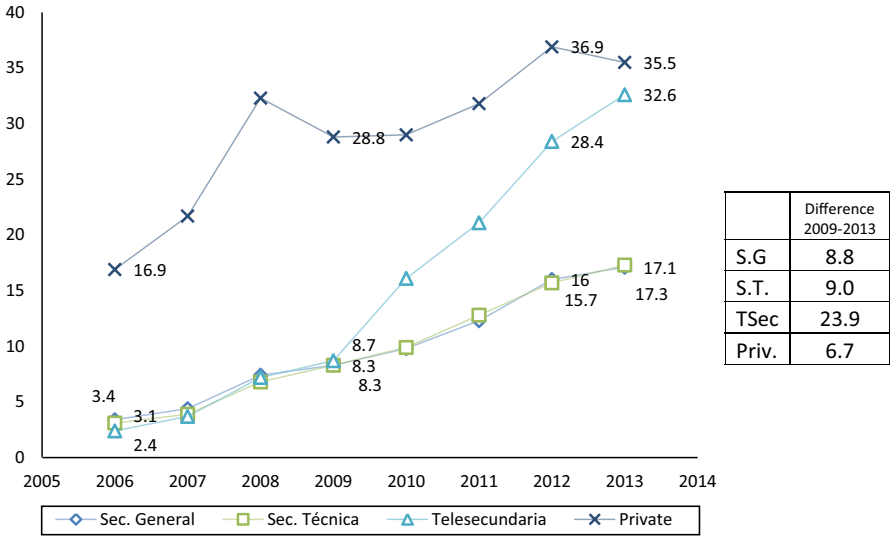

Fig. 1 Percentage of middle-school students with "good" and "excellent" scores on math by modality, 2006–2013 *Source:* SEP (2013) ENLACE 2013. Resultados Históricos Nacionales 2006–2013

Over that period, the percentage of Telesecundaria students scoring at good and excellent levels in Mathematics and Literacy moved from the bottom among the three modalities of public schools in Mexico to the top. In the case of Mathematics, by 2013 performance of students in Telesecundaria was similar to that of students in Mexican private middle-schools.

Within two years, PEMLE started to spread its influence to other institutional arenas, including the adoption of LCP's pedagogy as the core instructional practice for a wider education policy aimed at integrating several programs serving historically marginalized groups, called the Integral Strategy to Improve Educational Achievement (EIMLE, for its initials in Spanish), and the featuring of the new pedagogy of tutorial relationships as a recommended practice for all K-8 schools in new legislation aimed at integrating pre-school, elementary, and middle-school education.

PEMLE started to gain international visibility in 2010, after Richard Elmore from Harvard visited Mexico to learn about the program. Since then, over 25 students of the Education Leadership doctoral program at Harvard have visited Mexico to learn

Footnote 1 continued
(DGDGIE 2012; UPEPE 2012). (5) Many more schools than those in PEMLE had exposure to its core pedagogy—through the larger EIMLE strategy, propaedeutic courses for all grade 7 Math teachers and their students, national and statewide learning fairs, and the availability of free online resources for all teachers. (6) Effects of PEMLE on the overall performance of Secundarias Generales (SG) and Secundarias Técnicas (ST) would be harder to see in Figs. 1 and 2 for two reasons. First the proportion of SG participating in PEMLE relative to the total number of SGs is much smaller than in the case of Telesecundarias (11% vs. 20%). Second, STs in PEMLE improved at a similar or slower pace that STs not in the program, (7) So far, there's no compelling rival hypothesis to explain the dramatic improvements in Telesecundaria between 2009 and 2012.

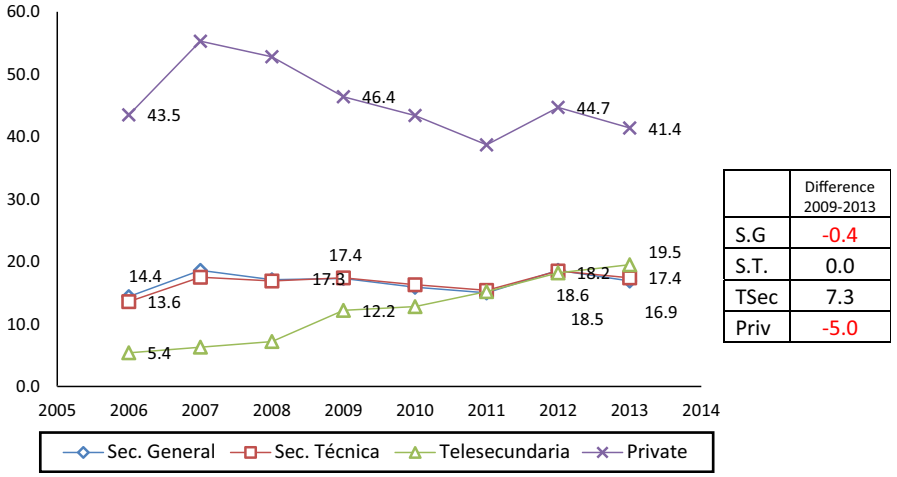

Fig. 2 Percentage of middle-school students with "good" and "excellent" scores on literacy by modality, 2006–2013 *Source:* SEP (2013) ENLACE 2013. Resultados Históricos Nacionales 2006–2013

about LCP. International publications (Cámara 2013; City et al. 2012; Rincón-Gallardo and Elmore 2012), presentations in international conferences, and networking have brought LCP to the attention of a broader audience. LCP's pedagogy is also being tried out at the Juvenile Court Community Schools in San Diego, California, in a handful rural middle-schools in the Araucanía region and a few dozen urban schools in Chile, two middle schools in Thailand, and one school in Singapore.

Despite its visibility and promising start, PEMLE had an abrupt end in 2012, after a new administration from the newly elected president asked the national leadership of PEMLE to leave the Ministry. Several leaders of PEMLE, including Ministry staff and members of CEAC who had joined the program regrouped around a new organization called Redes de Tutoría, S.C. with the intention of giving continuity to the work initiated through LCP and PEMLE. Redes de Tutoría secured short-term contracts with a few States to initiate or deepen LCP's pedagogy of tutorial relationships. Reportedly, some regions and schools in other states continue to use LCP's pedagogy of tutorial relationships, openly where there is political backing from local educational authorities, and under disguise where there is open opposition of local authorities to pedagogical changes such as the ones advanced through LCP. There's an effort currently underway to track down such regions and schools, but the total number very likely decreased substantively since PEMLE's abrupt end.

LCP's pedagogy of tutorial relationships was adopted in 2015 by the National Council for the Promotion of Education (CONAFE, for its initials in Spanish) as the medullar component of its renewed educational model. Dalila López and Juan Martín Martínez, holding senior leadership positions in CONAFE, are leading a national effort to fundamentally shift pedagogy in the approximately ten thousand

schools served by CONAFE—located in small, scattered communities with less than 500 inhabitants.

Theoretical foundations: Scale, wide-spread cultural change, and instructional improvement

The theoretical framework used to examine the scale and spread of the Learning Community Project combines two core ideas: Coburn's (2003) conceptualization of scale, and Rincón-Gallardo's (2015) framing of large scale instructional improvement as a process of widespread cultural change. While these two ideas are discussed separately for organizational purposes, they are better understood as a juxtaposed set of lenses to observe the same phenomenon, namely the widespread dissemination of a new pedagogical practice.

Cynthia Coburn argued in 2003 that the concept of 'scale' in education reform had to be further elaborated to ensure that reform efforts not only reached large numbers of schools but also more deeply and in a sustained manner. She proposed a notion of scale that involved four interrelated dimensions: *depth,* or to the extent to which practice is transformed in meaningful and deep ways; *spread*, or the expansion of reform practices to new sites or groups; *shift in ownership,* or the transfer of knowledge and authority to sustain the reform to the actors expected to carry it on in their everyday work; and *sustainability*, or the creation and adaptation of policy and infrastructure systems to support the consolidation and expansion of deep improvements in practice over time. These four dimensions are used to examine LCP's scale.

Bringing effective pedagogy to scale, or the spread of a new pedagogical practice to a large number of sites, is conceptualized herein as a process of widespread cultural change (Rincón-Gallardo 2015). This conceptualization encompasses four main ideas. First, the problem of changing pedagogy at scale is seen not only as a technical but, more importantly, a cultural project. Several authors in the educational change field have observed how profoundly resilient the default culture of schooling is to any attempts to transform it (Cuban 1984; Elmore 1996; Sarason 1982). Broadly defined, the default culture of schooling consists of the established instructional culture and institutional structure of schools. Some distinguishing features of such default culture include a top-down separation between teaching and learning, with authority and control highly concentrated in the hands of teachers, the classification of students in groups determined by age or ability level, and a focus on covering pre-determined content at the same time and pace for the whole group. These features are at remarkable odds with how children learn best (Holt 1991; November 2012) and the teaching practices that most effectively improve student learning (Hattie 2009). Consequently, effective pedagogical change requires the disruption of the default culture of schooling and the creation of a new culture that enables and produces deeper student learning.

Second, the instructional core, or the relationship between teachers and students in the presence of knowledge (City et al. 2009; Hawkins 1974) is considered the fundamental unit where large-scale pedagogical change has to occur. Disrupting the

default culture of schooling involves changing in fundamental ways the nature of the relationships within the instructional core. What specifically is meant by changing the instructional core *in fundamental ways* is discussed in the next point.

Third is the deliberate positioning of prospects of pedagogical change in the context of social relations of domination (Apple 2013; Giroux 1983). As is the case with most modern institutions such as the State and public health, at the core of schooling are vertical relationships of authority and control. Experts, considered to have superior knowledge, dictate what has to be done and how. Acolytes or implementers, considered to have inferior knowledge, are expected to follow the indications of experts. Historically, there has been a clear hierarchical divide between teachers and students in classrooms, and between education policy and teachers: teachers over students, policy over practice. Since relationships of power are a defining aspect of classroom practice and education policy, they are inherently political (Freire 1970; Giroux 1983). Finally, 'cultural change' is understood here not only as one that disrupts or subverts existing social relations in classrooms and in policy-making, but one that deliberately seeks to establish new social relations based on humanist principles of dialogue, respect, partnership, and solidarity (Freire 1970; Giroux 1983; Hooks 1994).

To better understand how pedagogical change can spread at scale, the author (Rincón-Gallardo 2015) has proposed to integrate knowledge and theory from two fields: large-scale instructional improvement (Elmore 1996; Fullan 2015) and widespread cultural change (Rochon 1998). He argues that these two fields "have evolved separate from each other and yet, when combined, can illuminate the problem of transforming pedagogy at scale in a new light. In a nutshell, […] widespread cultural change in classrooms occurs when a new pedagogy developed by a critical community is adopted by movements who disseminate the new practice in three arenas: the social, the political, and the pedagogical arenas." (p. 31).

As defined by Rochon (1998), a critical community is as a relatively small network of critical thinkers who develop a shared understanding and sensitivity to a problem, an analysis of its causes, and a stance on how to address it. The influence of critical communities becomes powerful to the extent that their ideas and practices are adopted by wider social and political movements that carry them to a wider audience to create pressure for change. According to Rochon, the social arena is the world of changing values, identities, concerns, and daily behaviors, and thus the locus of social movements is in homes, workplaces, schools, etcetera. The political arena, on the other hand, is the realm of leaders, movement organizations and policy demands. Because events in the social and the political arena often influence each other, Rochon argues that adequately understanding widespread cultural change demands attention to its manifestations in both the social and the political arenas. Transferred to the field of education, a comprehensive understanding of how large-scale pedagogical change occurs requires an examination of its micro- and macro-dynamics, that is, the everyday activities of movement actors, and the wider structures of political opportunities that enable or constrain pedagogical change in classrooms and across educational systems.

To the social and political arenas, Rincón-Gallardo (2015) adds the *pedagogical* arena to bring specific attention to the dynamics within the instructional core and the

processes and conditions under which new practices are learned. There are two major reasons why this is crucial to adequately examine large-scale pedagogical change. The first reason is the historic failure of most educational reforms to change in any fundamental way the instructional core. Even when deliberate efforts have been made to substantially transform instructional practice, the default culture of schooling has more often than not re-emerged and prevailed as the dominant form in which teachers and students go about their everyday classroom activities (Cuban 1984; Elmore 1996). Second is the little or null attention social movements in education, or at least the research that documents them, seem to have given to teaching and learning in classrooms. Even though social movements are often major collective agents of cultural change, research on social movements in education has most prominently focused on contentious politics, that is, the processes and outcomes of protest and contestation against policies perceived to threaten teachers' working conditions (Grindle 2004; Stein et al. 2005) or to negatively affect educational opportunities for students (Grossman 2010; Salinas and Fraser 2011). Social movements oriented towards and sustained through radical pedagogical transformation have been rarely seen or documented. If social movements are to become forces of widespread pedagogical change, attention to the instructional core is key.

The pedagogical arena does not only encompass the dynamics within the instructional core, but also the processes and conditions under which people learn new pedagogies. As Elmore (1996) points out, a basic condition to tackle the challenge of transforming instructional practice on a large scale is the development and testing of explicit, practical theory that explains how people learn to do things differently and how institutions can support and sustain that learning, while taking into account the institutional complexities that operate on changes in practice. To tackle the problem of changing instructional practice at scale, Elmore (1996) proposes four key strategies: i) *developing external normative structures for practice*, that is, creating shared clarity and agreement on what effective pedagogy looks like; ii) *creating organizational structures that intensify and focus intrinsic motivation to engage in challenging practice* iii) *designing intentional processes for reproduction of success*; and iv) *creating structures that promote learning of new practices and incentive systems that support them*. These four strategies are compatible with the theory of action for widespread pedagogical change presented here. Looked at from Elmore's perspective, the external normative structures for practice are the new pedagogical ideas and practices developed by a critical community. The organizational structures that intensify and focus intrinsic motivation to engage in challenging practice pertain to the pedagogical arena, or more specifically, to how and why people learn new pedagogies. Finally, the intentional processes for reproduction of success and the structures and incentive systems that support new pedagogical practices pertain to the social and political arenas.

Methodological considerations

This paper draws on a detailed 90,000 word case study about LCP (Rincón-Gallardo 2013), and additional classroom observations, interviews, and document analysis conducted between 2013 and 2016. Taken together, the data reviewed to develop the key arguments presented here include interviews and focus groups with over 80 LCP actors - teachers, parents, school supervisors, support staff, and LCP leaders at the State and national levels; classroom observations in 17 schools in 4 States; and over 750 documents, including books, articles, website information, reports, meeting minutes, and email communications created by over 75 LCP actors from 25 States between 2003 and April 2015.

The paper includes two main analytical sections: The first looks closely at the scale reached by LCP relative to spread, depth, ownership, and sustainability, while the second examines the processes and conditions under which LCP's pedagogy of tutorial relationships spread to thousands of Mexican public schools. Each of these sections required a different analytical approach, each discussed below.

To examine the extent and quality of LCP's scale, the data listed above was reviewed with the deliberate intention of understanding the development of LCP relative to its spread, depth, shift in ownership, and sustainability. To examine *spread*, available information was reviewed and sorted out to capture the number of schools reached by LCP, the pacing of the growth, and the existence of any differentiated sets of interventions for different regions or groups of schools. To look at *depth*, detailed descriptions of classroom observations in a diverse set of 17 schools in 5 States, as well as dozens more general reports describing or commenting on observed practice in classrooms and teacher professional learning sessions were analyzed. Analysis of LCP's observed pedagogical practice first focused on the descriptive features of the tasks performed by students, and the interactions within the group. It then sought to predict student learning as a function of the tasks students were asked to perform (Doyle 1983); as a next step, three levels of depth of LCP's practice were identified; finally, key commonalities and differences in strategies and conditions among groups in different levels of practice were identified, and thus conclusions were drawn about key conditions that explained differences in levels of depth of instructional practice among LCP schools. *Shift in ownership* was explored by sorting out and analyzing existing documents, interviews and focus groups with the intention of understanding the motivations of multiple LCP actors to be part of a larger effort to transform classroom pedagogy, as well as whether and to what extent changes in practice were driven by teachers and students themselves or by external LCP leaders. Finally, *sustainability* was examined by looking at the development of LCP over time, identifying those regions and States where LCP's practice took roots, and comparing the conditions that were present in such regions and not in others were LCP waned. Two major points in the history of LCP allowed for this comparative analysis. First, of all the small-scale pedagogical change projects carried on by CEAC between 2004 and 2006 only one—in the state of Zacatecas—continued beyond year two. Since all these projects had common design features, were carried

on by the same organization, and were working in similar contexts, they offered a useful "control", however imperfect, against which to compare the case of Zacatecas. The particular combination of conditions that were present in the case of Zacatecas and not in the rest of the projects was used to identify key conditions for sustainability. A second event that offered an opportunity to examine sustainability was the sudden interruption of PEMLE in 2012. Despite its disappearance from the national agenda, LCP's practice continued in some schools, regions, and States. Again, comparing the combination of conditions present here and not in sites where LCP waned offered insight into the conditions that enable sustainability.

The question of how and under what conditions LCP's pedagogy reached scale was examined in some detail in a recent paper by the author (Rincón-Gallardo 2015), who identified twelve strategies and conditions created or capitalized on by LCP actors to advance cultural change in the pedagogical, social, and political arenas. This paper presents a more parsimonious, compact set of seven key principles seeking to simultaneously capture the essential features of the larger list and to offer more generalizable principles for action.

In order to assess and enhance the face validity of these seven key principles, they were introduced to a few dozen LCP actors (including former LCP national leaders, state leaders, and regional supervisors) by email, in workshops, and through informal conversations. These actors were explicitly asked to offer feedback on completeness, accuracy and parsimony. The seven principles presented here incorporate their feedback. As an initial assessment of external validity, the seven principles of action have been tested against another case of large-scale pedagogical change that the author is currently investigating: the Escuela Nueva model in Colombia, discussed in another paper of this special issue. While they don't capture the entire strategy of Escuela Nueva, the seven key principles are shared in common between Escuela Nueva and the LCP, and thus suggest generalizability beyond the particular case of LCP.

Four dimensions of LCP's scale

Spread

In its initial phase of small-scale expansion, LCP spread to about 60 schools, most of them in the State of Zacatecas and a few in the neighboring state of San Luis Potosí. 'Contagion' was a term used by several LCP actors, from teachers and parents to State and national leaders, to describe the core mechanism of spread of the new pedagogy of tutorial relationships to new sites, especially at the grassroots stage of LCP. In a nutshell, this 'contagion' was first triggered by the personal transformation that occurred when teachers experienced powerful learning themselves or when they witnessed visible improvements in the learning and engagement of their students. These experiences were often followed by a desire of encouraging similar experiences in others. When teachers, parents or administrators observed improvements in student learning and engagement, they started to spread the word to their peers in other schools, communities, and regions. During the large-scale roll

out of LCP through PEMLE, the spread of the new pedagogy was not merely left to the rather organic process of 'contagion', as participation in this nationwide program was determined by the performance status of schools, not necessarily by the interest of schools in joining. However, strategies were designed to encourage buy-in on the part of teachers and local administrators, mostly through the creation of multiple venues to observe, experience and try out the new pedagogy in professional learning sessions and in classrooms. School visits and exchanges were organized to showcase and model the practice of tutorial relationships for people from other schools and regions. The exposure to and direct experience of tutorial relationships offered by these events spread the enthusiasm with the new pedagogy and the desire to both get better at it and encourage others to experience and learn the new pedagogical practice to increasingly larger numbers of people.

Initially, the strategy of CEAC to respond to a growing demand of teachers interested in joining LCP was to increase the number of its LCP coaches in the state of Zacatecas from 2 to 5, each coach supporting 3 schools. But when the number of schools surpassed the capacity of CEAC, the strategy was quickly modified. While CEAC coaches continued to offer classroom-based support in some schools, they also expanded their reach by recruiting some pioneer LCP teachers as coaches in neighboring schools, negotiating their release from classroom teaching with local educational authorities. CEAC also started to train existing support staff from the regions where LCP was spreading. Where no coach was available, spaces for periodic teacher collaboration were created and school exchanges organized to allow new teachers to gain exposure to, try out, and refine the new pedagogy.

LCP had an intermediate stage of expansion, when it was adopted by the Ministry of Education and piloted in 11 States. At this stage LCP's pedagogy spread to 140 schools in 2008 and about 400 the following year. Intensive and focused training of school support staff from the State Ministries of Education was the core strategy to create the capacity to change instructional practice in this larger number of schools. LCP schools at this stage received between 4 and 6 visits per year from these State-level coaches. CEAC coaches continued to visit schools and support teachers' efforts to introduce or consolidate the new pedagogy in classrooms, but most of the attention was directed to the creation of capacity within education departments in the states participating in LCP.

The large-scale roll out of LCP occurred through PEMLE between 2009 and 2012. PEMLE's main universe of attention were the 9000 schools that over 3 consecutive years had half or more students scoring below the basic level of proficiency in the national standardized test ENLACE. Schools that had already joined or were interested in joining LCP were also included in the program. In this latter phase, the spread of the new pedagogy was orchestrated through the development of a social network strategy to engage actors from every layer of the educational system in the practice of tutorial relationships. 'Nodes' or collegial teams were created in schools, districts, states and the national Ministry of Education to practice and master the new pedagogy, mainly using content selected from the national curriculum. District nodes offered direct support to schools, state nodes supported district nodes, and the central node offered support to state nodes. Actors in every node were expected to visit schools and support teachers in their

efforts to consolidate the new pedagogy in their classrooms, but district nodes offered the most intensive support to schools and classrooms. Additionally, dozens of exchanges between schools, regions and states were organized locally and nationally between 2009 and 2012 to showcase, practice, and refine the new pedagogy of tutorial relationships. A common strategy to ensure every teacher in large training sessions was assigned a tutor was to invite teachers and students with expertise in LCP's pedagogy as tutors of the trainees.

PEMLE was designed to offer differentiated support to schools in 3 broad categories. The first category, with about 7400 schools, were those schools located in regions where at least 3 schools had shown low levels of student achievement for three consecutive years. The second category, with 2400 schools, were schools located in regions with only 1 or 2 schools with low achievement for three consecutive years. A third category were nearly 30 thousand schools with low levels of student achievement in the latest standardized test results. Schools in all three categories participated in professional learning sessions and had access to online resources and materials that described and offered guidelines to introduce the practice of tutorial relationships in classrooms. The schools in the first category were assigned a coach to support teachers to introduce and consolidate the new pedagogy in classrooms. Schools in the second category were offered access to online coaching support, whereas schools in the third category had no coaching support.

By early 2012, 9000 schools were participating in PEMLE. While not all these schools were assigned or constantly visited by an LCP coach, in at least this number of schools teachers were directly exposed to the practice of tutorial networks. In the period between 2011 and 2012, LCP's pedagogy was further spread to a larger universe of schools through the creation of the Integral Strategy to Improve Educational Achievement (EIMLE, for its initials in Spanish), which adopted tutorial networks as the core pedagogical practice for all educational programs in the ministry serving historically marginalized groups. Furthermore, upon request from the Deputy Minister of Basic Education, the national leadership team of PEMLE designed and delivered propaedeutic courses in math for all 7th grade teachers and students in Mexico in 2011 and 2012.

Depth

Detailed observations of LCP classroom activities reveal some features of classroom practice that are consistent across LCP schools: Students work individually, in pairs, or small groups, each with a topic of their choice, which is selected among the available catalogue of topics within the group. At any given moment, some students write down information or accounts of their learning process, others prepare public presentations of their learning, some read, and yet others alternate between studying and acting as tutors to other students. Teachers either walk around to observe the work of students or sit on their desk and call students one by one to ask about their work. Where a tutor and a student are working together, they sit next to each other and talk about the text or problem the student is tackling or the work he is producing. With some regularity, one or more students

present major takeaways on what and how they have learned, usually followed by questions from the audience.

At the same time, a closer look at the interactions within the instructional core reveal a wide range of levels of depth of the practice between schools. At the most basic level, the tasks performed by students and encouraged by tutors mainly involve the *repetition of pre-determined steps of inquiry*. Most of the attention of tutors is on ensuring that students complete these pre-determined steps, not so much on ensuring students' understandings of their topics of study. In classrooms where pedagogy is at this basic level of depth, students may be able to describe what steps they are following, but often struggle to explain in their own words what they've learned or to articulate why they are doing what they are doing. At a next, intermediate level of depth, students are asked to present their personal interpretations or solutions to their topics of choice, both orally and in writing. The focus of tutors is mostly on *ensuring that students have a solid grasp of concepts and relationships* that are considered central to understanding the chosen text or problem. At the most advanced level observed so far, students are asked to present their thinking to the tutor both in writing and orally, and the attention of the tutor is mostly focused on *understanding how the student is making sense of the text or problem under discussion* and using such thinking as a resource to help students further and deepen their understanding. In the early stages of LCP, before PEMLE, the intermediate level was the modal practice in LCP classrooms. After the large-scale roll out through PEMLE, the modal practice was rather in between the basic and the intermediate levels. The advanced level is evident in only a reduced number of classrooms throughout the history of LCP.

The depth of LCP's pedagogy in classrooms is a function of two key conditions, discussed in more detail in the next section: 1) the degree of exposure and associated opportunities afforded to different teachers to experience and observe tutoring practice with deeper levels of sophistication; and 2) the degree to which the practice of tutoring is presented to teachers as a finished model to be implemented with fidelity or as an open and flexible model to be constantly adapted and modified to enhance student learning.

Shift in ownership

Shift in ownership was almost a pre-requisite for participation in LCP. At the initial stages of the project, participation was voluntary. Teachers who decided to join LCP would receive intensive support from an LCP coach in exchange for teachers' time for training—often in the afternoons, on weekends or even during holidays. As discussed earlier, 'contagion' was the basic mechanism of spread of LCP, especially in its early stages. Participation in LCP was driven mostly by intrinsic, rather than extrinsic motivation, thus securing teachers' ownership of LCP's project of pedagogical change.

During LCP's large-scale roll out, it soon became evident that shift in ownership was a fundamental condition to introduce the new pedagogy in classrooms. Early on in the development of PEMLE, as new schools were incorporated in the program based on their status as low performing, rather than on voluntary participation, some

degree of resistance emerged among teachers. Initially, PEMLE had been called *Emergent* Program for the Improvement of Educational Achievement, and the schools identified as low performing were qualified as "target" schools. Some teachers found these labels offensive and opposed the program. Once this flaw in the original design of PEMLE was flagged, the word 'Emergent' was removed from the program's name, and the 'mandatory' nature of the program shifted to a more invitational tone. Attendance to PEMLE training was still mandatory, but the new strategy was to attract teachers to the new pedagogy by affording them direct experiences of powerful learning, as well as opportunities to witness positive changes in student learning and engagement that resulted from adopting LCP's pedagogy of tutorial relationships. PEMLE leaders had to learn quickly to shift PEMLE's spread strategy from imposition to 'contagion', thus facilitating shift in ownership.

Sustainability

LCP's pedagogy of tutorial relationships continued in some schools, regions and states, despite and after the sudden disappearance of PEMLE from the national education agenda. Where state or regional leaders decided to embrace and continue the work of pedagogical transformation initiated by LCP and PEMLE, tutorial relationships are practiced in the open. In other cases, tutorial relationships are practiced almost secretively, due to attempts of some state or regional system leaders to bring LCP to an end. As a side note, authoritarianism has arrived back with full force in Mexico since the return in 2012 of the PRI to the presidency, the party that ruled the country for over 60 years until the year 2000.

A few highly resilient teachers and local leaders continue to support and practice tutoring in classrooms despite threats, bullying, and obstacles imposed by system leaders with an agenda that seeks to maintain control over schools and teachers. Others, including some teachers who had become highly committed to the pedagogical change work advanced by LCP have flipped back to conventional instruction, despite former declarations that they would not return to their old practice. This return to conventional practice might be best explained by the fact that most teachers in Mexico feel and want to be part of the public education system, which includes being in good terms with their immediate educational authorities.

The post-PEMLE scenario briefly described here suggests that rather than a unidirectional *shift in ownership* (from reformers to implementers), what is necessary to sustainably change pedagogy at scale is the development of *co-ownership* between teachers and the educational system where they work. Ownership on the side of educational authorities involves open endorsement of the pedagogical change agenda, protecting schools from policy distractors, and securing access to key capacity building resources, such as staff appointed as pedagogical change coaches and time and space for ongoing collaboration and exchange centered around the new pedagogy. More broadly, the development of co-ownership of the pedagogical change agenda is supported by seven principles for

large-scale pedagogical change extracted from the LCP experience, which are discussed below.

Seven key principles to bring a new pedagogy to scale

Table 1 presents seven key principles to bring a new pedagogy to scale extracted from the LCP case. Each of these principles is discussed individually in this section.

1. Turn 'disadvantage' into possibility

After studying over 100 educational innovations in the Global South, Charles Leadbeater (2012) concluded that emerging economies offer a more fertile ground for radical innovation in education than developed economies. This is so because radical departure from conventional practice is often a fundamental necessity in the margins of society, where there is huge need, unmet demand, and where conventional solutions are too costly and ineffective. Gladwell (2013) has further argued that what has been conventionally considered 'disadvantage' often opens up crucial opportunities that offer the Davids of the world an enormous advantage over seemingly invincible Goliaths.

The Learning Community Project is an example of radical educational innovation built upon a core belief that the margins of the Mexican education system offered enormous possibilities, more so than mainstream public schools, to depart from conventional practice and create a new pedagogical culture that placed student and adult learning at the center. Small schools located in far-off communities offered ideal conditions for trying out a practice that ran against the grain of conventional schooling. The small number of students made it easier to introduce one-on-one tutorial relationships. Having only one or two teachers in the school facilitated rearranging school schedules to allow the student's own pace to determine the rhythm of classroom activities, in particular allowing for long blocks of time for individual inquiry. The reality of many students having to miss school for days or even weeks to help their parents with activities such as farming, harvesting, and home maintenance, made it necessary to develop a flexible model, where each student could move at their own pace and continue where they had left once they were back in school. Finally, the relatively difficult access to the far-off,

Table 1 Seven principles to bring a new pedagogy to scale

1. Turn 'disadvantage' into possibility
2. Establish a clear purpose centered on student learning and a compelling vision of effective pedagogy
3. Directly change the instructional core
4. Create multiple opportunities to observe, practice, and refine the new pedagogy
5. Attract the support of system leaders, or become one
6. Change the surrounding institutional environment from the inside out
7. Keep a strong link between design and execution

scattered, small communities where LCP first introduced its new pedagogy, meant a weaker presence of institutional controls and supervision over the everyday activities of students, teachers, and local administrators, thus making it easier and less risky to depart from conventional classroom practice. The 'disadvantage' of multi-grade schools opened up possibilities for radical innovation that are harder to find in mainstream public schools.

2. Establish a clear purpose centered on student learning and a compelling vision of effective pedagogy

LCP placed its focus on a simple yet worthwhile purpose: Developing the capacity of young people and adults to learn independently through written texts. And it was built on a precise vision of effective pedagogy: one based on the core assumption that meaningful learning occurs when the interest of a learner encounters the capacity of a tutor.

The pedagogical vision of LCP had two main components. First, tutorial dialogue was seen as the key technology to bring about effective learning. In a sort of Socratic dialogue, tutors and students engage in conversations oriented towards identifying what the learner already knew and connecting it to new information to make sense of and create new knowledge. The second key notion was artisanal transmission of the skill to learn independently. As is the case in learning-rich environments as varied as artisanal craft-shops, science laboratories, sport clubs, and dancing studios, LCP leaders posed that the skill to learn independently would be best learned in settings where such skill was constantly modeled by more expert learners, where apprentices had multiple opportunities to practice the skill and constant access to more highly skilled peers and 'master' learners (López and Rincón Gallardo 2003; Rincón-Gallardo 2012). An important corollary to LCP's pedagogical vision is that the skill to learn independently was considered simultaneously the point of departure and the destination. That is, LCP encouraged students and adults alike to practice independent learning from day one. Initial attempts would certainly be imperfect, but continuous practice and exposure to more experienced learners would over time enhance their skill as independent learners.

3. Directly change the instructional core

Unlike many educational reform efforts of the past several decades which have attempted rather unsuccessfully to change pedagogy indirectly (e.g., through new curricula, standards, teacher appraisal, high-stakes accountability), LCP took the direct transformation of the instructional core as its starting point. This had a powerful effect on teachers and students, who in a few years had created a collective force to spread pedagogical change to new sites and across the Mexican educational system. Through LCP, teachers had concrete experiences of deeper learning and witnessed palpable improvements in the learning and engagement of their students. These experiences fueled the commitment of teachers and students alike to turn

their schools into learning communities and their desire to share the new pedagogy with students, teachers, and administrators in other schools and communities.

The existence of a common pedagogy that was owned and constantly practiced by teachers and students opened an important new possibility for its large-scale rollout, a possibility that has been missed by most education reform efforts: students who mastered the practice of tutoring started to participate as trainers of adults. In PEMLE, it became regular practice to deploy cadres of adults and young people as tutors to train teachers and administrators who were new to the program. Bringing in students as tutors multiplied in significant ways the capacity to reach large numbers of trainees in relatively short periods of time.

It is worth mentioning here that LCP was not driven by measurable targets. Nonetheless, LCP and PEMLE schools fared well on standardized measures of student achievement. LCP schools with the most dramatic improvements in student achievement were those where teachers deliberately looked into student achievement data, built their catalogues of topics based on the subject areas that required attention, and used tutorial relationships of dialogue as the vehicle to ensure student mastery of these topics. Combining LCP's purpose and pedagogical vision with measurable targets is perhaps a more appropriate solution if more dramatic improvements in conventional measures of student achievement are the goal.

4. Create multiple opportunities to observe, practice, and refine the new pedagogy

Classroom-based coaching, communities of practice held weekly to monthly, school visits, and school exchanges were some of the opportunities created or capitalized on by LCP actors to observe, try out, practice, and refine the new pedagogy of tutorial relationships. In addition to their individual and collective capacity-building function, these encounters helped create a sense of collective identity and collective efficacy among participants. Using the 'contagion' metaphor referred to earlier, collaborative and collective actions such as the ones just listed simultaneously inoculated the new virus and spread it to new sites.

The sudden disappearance of PEMLE from the national agenda together with important changes in legislation constraining the out-of-school time for teachers has greatly diminished the opportunities for teachers formerly involved in LCP to meet with their peers to examine and improve their practice, resulting in many teachers returning to their old practice and many others adopting a mechanistic version of the new pedagogies. LCP is still alive in some regions and states where local administrators continue to support and enable teacher collaboration for pedagogical improvement. Taken together, the negative effects of constraining teacher collaboration, and the existence of strong teacher collaboration in the schools, regions and States where LCP remains alive, point to the fundamental role it plays in sustaining large scale pedagogical change over time.

5. Attract the support of system leaders, or become one

Support from local authorities was very important to enable the consolidation and spread of LCP in classrooms and schools. Local authorities offered access to key capacity building resources, such as existing support staff appointed as full-time LCP coaches, as well as time and space for teachers from neighboring schools to work collaboratively to grow their catalogues of themes and refine their tutoring practice. Inviting local authorities to observe the positive changes taking place in classrooms served as an effective strategy to attract their support. Upon PEMLE's abrupt end, the existence of support from local authorities—or lack thereof—has proved key to determine whether the new pedagogies continue or fade in schools.

As mentioned earlier, of the several small-scale pedagogical change projects initiated by CEAC, only the one in the state of Zacatecas took hold. In this case, the support of the Deputy Minister of Basic Education in Zacatecas and his decision to adopt LCP in the State after external financial support ended were crucial to ensure the sustainability of the project over the following years. No other CEAC-led project earned this type of sustained support from State-level educational authorities during the grassroots phase of LCP. Without support from 'the top' attempts initiated by CEAC to change pedagogy in schools failed to sustain. In contrast, the right combination of support from the top and movement at the grassroots level sustained and spread LCP's pedagogy in Zacatecas from 2004 to 2012.

The arrival of Dalila López, founding leader of LCP, to the Mexican Ministry of Education and her ascent into the Department of Innovation were crucial developments in the history of LCP, and a fundamental condition to bring LCP's pedagogy to scale. In 2003, when LCP was just starting, two LCP leaders, including López, joined the leading team of the *Integral Reform of Lower-Secondary Education* (RIES) headed by Dr. Annette Santos, an established educational researcher specialized in Telesecundarias. That same year, Santos and CEAC partnered to apply for international funding to initiate and assess the introduction of LCP in the States of Zacatecas and Chihuahua. As leaders of RIES, Santos and López were able to negotiate access to schools to initiate the pilot with ministers of education in these states. Their position also gave them leverage to convene LCP participants from all levels of the educational institution to participate in 'bargaining arenas'—see point 6 below—where decisions were made to facilitate the consolidation and spread of learning communities.

Later on, when she joined the Department of Innovation at the Ministry of Education, López brought LCP to the attention of her boss Juan Martín Martínez, who in turn brought it to the attention of the Deputy Minister of Education of that time, Fernando González. González's subsequent visit to a small learning community in Zacatecas triggered the development of a pilot project and eventually led to the development of PEMLE. But López's influence on the development of LCP and later PEMLE was deeper than merely bringing the attention of influential policy makers to LCP. Once in the Department of Innovation, she gradually brought other LCP leaders to work with her, forming a team whose capacity to effect change

was grounded on the instructional expertise developed over years of collective learning through the early stages of LCP.

The endorsement and support of Fernando González, Deputy Minister of Education during the years when PEMLE was in operation, was another fundamental condition to spread LCP's pedagogy at scale. As it turns out, Fernando González was son in law of Elba Esther Gordillo, then head of the powerful Mexican teachers' union. Gordillo played a key role in the electoral victory of Felipe Calderón as president of Mexico in 2006, and enjoyed strong political support from his administration between 2006 and 2012. In this context, González enjoyed a favorable political environment to mobilize his educational agenda. Furthermore, his strong link to the teachers' union worked in favor of LCP, as it served as a good preventive measure against any possible opposition from the union—although no opposition from the teachers' union to LCP has been documented over its entire history.

The advantage of González's endorsement and support to PEMLE during the Calderón administration turned quickly into disadvantage when Enrique Peña Nieto of the National Revolutionary Party (PRI) gained the presidential elections in 2012. Gordillo is now in prison, and when a new administration arrived at the Ministry of Education under Peña Nietós leadership, it sought to swipe away the policies put in place by González, including PEMLE. The sudden suspension of PEMLE reveals at the same time the frailty of an otherwise strong large scale pedagogical change initiative, and the fundamental role that political endorsement and support play in securing sustainability.

6. Change the surrounding institutional environment from the inside out

The author of this paper has argued elsewhere (Rincón-Gallardo 2015) that LCP's pedagogy has distinctive features counter-hegemonic, that is, as qualitatively distinct from the dominant institutional culture and power relations of schooling. This pedagogy represents a fundamental shift in the relationships within the instructional core: from vertical relationships of authority and control (teacher over student, content over teacher and over student) to horizontal relationships of dialogue and mutual influence (between teachers and students, between students and content, and between teachers and content). As such, the introduction of LCP's pedagogy in regular classrooms soon created tension with many of the institutional structures and practices of schools and school systems—e.g. a highly prescribed curriculum, 50-min blocks of time per subject matter, bi-monthly grade report cards, etc.

In the early stages of LCP, leaders of the project convened meetings with diverse stakeholders (teachers, local and state administrators, project leaders, researchers, etc.) to discuss progress, identify institutional requirements and conditions that enabled or constrained pedagogical change, and make decisions to reinforce enablers and remove constraints—what Elmore (1979/1980) calls "bargaining arenas". Such decisions included, for example, appointing support staff from the

school supervision to be trained and serve as LCP coaches, securing time and facilities for teachers to work collaboratively to increase their catalogues of topics and refine their practice as tutors; decreasing administrative workload for LCP teachers; or excusing them from attending otherwise mandatory extra-curricular activities such as sport events or national anthem contests. The importance of these bargaining arenas for the consolidation and spread of LCP is two-fold: First, they signaled to LCP teachers that their pedagogical change work was valued by their institution; and second, they contributed to create an institutional environment more likely to nurture and sustain a fundamentally new set of pedagogical practices in classrooms.

7. Keep a strong link between design and execution

The LCP maintained a close connection between design and execution in both its small- and large-scale phases. During the small-scale phase, LCP leaders served as classroom coaches themselves, trying out strategies in classrooms alongside teachers, and continuously refining and adapting their approach based on the intensive learning gained from deliberately attempting to turn conventional classrooms into learning communities. Also, the pedagogy of tutorial relationships was defined from the start as an open, unfinished model, to be continuously reshaped and refined based on feedback from classroom implementation.

When LCP's pedagogy was adopted by PEMLE, there were two main ways in which the program endeavored to keep design and execution tightly linked. First, López brought to her team a cadre of educators with deep experience on LCP and a good reputation among teachers. Second, PEMLE participants, regardless of their formal role in the education system, were expected to know, model, and practice the new pedagogy that was expected from teachers in classrooms.

There were instances where PEMLE failed to maintain a close link between design and execution. Prominent examples include the appointment in some state-level ministries of PEMLE leaders with no previous experience with LCP or similar experiences of pedagogical change; and the use of LCP's pedagogy as a fixed, rather than open and unfinished model. Where PEMLE failed to keep a strong link between design and execution, pedagogical practice often turned into mechanistic classroom practices of questionable quality. The negative effects of failing to keep a close link between design and execution signal to the crucial role this close link plays in bringing effective pedagogy to scale.

LCP and the future of educational change

The Learning Community Project is a rare occurrence. Seldom does a small-scale, grassroots initiative trigger a movement of pedagogical change that spreads to thousands of schools, and shows improvements in student achievement in a relatively short period of time. Yet it is precisely its rarity that may offer the most important contributions to the future of educational change. It is becoming

increasingly clear that schooling and school systems, even high performers, are running out of steam and that doing more of the same in education reform will not produce the schools and systems that will be required to prepare the younger generations to adapt to and positively transform a rapidly changing and unpredictable world (Mehta et al. 2012). To conclude this paper, two key contributions of LCP to the future of educational change are briefly discussed.

The first contribution is LCP's logic of operation as a social movement, rather than conventional policy. It is widely accepted that effective education reform has to fundamentally shift the culture of schooling. It is also known that social movements have historically served as collective agents of cultural change. Yet education reform around the world has rarely approached the problem of transforming teaching and learning as a matter of triggering and sustaining a social movement that fundamentally shifts existing social relations of authority and control in classrooms (between teachers and students) and in educational systems (between policy and practice) into horizontal partnerships where both sides deliberately and continuously learn from and influence each other.

The second contribution is captured in the seven principles to bring effective pedagogy to scale. These principles offer practical guidance to trigger and sustain movements of widespread cultural change in classrooms and across entire educational systems. Three combined features make these seven principles potent. First, they place learning, rather than schooling, at the center of the educational endeavor. Second, they are relatively simple. Third, they are fundamentally different from the logic of education reform that has dominated education policy for decades, and thus offer guidance to a radically new direction for educational change.

References

Apple, M. W. (2013). *Education and power*. New York, NY: Routledge.

Azuma, A. (2016). *Avances y Logros de la Telesecundaria en México*. Report prepared for the Deputy Minister of Basic Education, Mimeo.

Cámara, G. (2003). *Learning for life in Mexican rural communities*. Mexico City: The CONAFE Post-primary Centers, CONAFE.

Cámara, G. (Ed.). (2006). *Enseñar y Aprender con Interés: Logros y testimonios en escuelas públicas*. México: Siglo XXI Editores.

Cámara, G. (Ed.). (2008). *Otra educación básica es posible*. México: Siglo XXI Editores.

Cámara, G. (2013). The small origins of large-scale school reform in Mexico. In H. Malone (Ed.), *Leading educational change: Global issues, challenges, and lessons on whole system reform*. New York: Teachers College Press.

Cámara, G., Rincón-Gallardo, S., López, D., Domínguez, E., & Castillo, A. (2003). *Comunidad de Aprendizaje: Cómo hacer de la educación básica un bien valioso y compartido*. Mexico: Siglo XXI Editores.

Carvajal, E. (2003). Una mirada a las aulas de telesecundaria: Reconstrucción del modelo pedagógico en el caso de las matemáticas. *Revista Latinoamericana de Estudios Educativos, 31*(3), 151–157.

City, E. A., Elmore, R. F., Fiarman, S. E., & Teitel, L. (2009). *Instructional rounds in education: A network approach to improving teaching and learning*. Cambridge, MA: Harvard Education Press.

City, E. A., Elmore, R. F., & Lynch, D. (2012). Redefining education: The future of learning is not the future of schooling. In J. Mehta, R. B. Schwartz, & F. M. Hess (Eds.), *The futures of school reform* (pp. 151–176). Cambridge, MA: Harvard Educational Press.

Coburn, C. E. (2003). Rethinking scale: Moving beyond numbers to deep and lasting change. *Educational Researcher, 32*(6), 3–12.

Cuban, L. (1984). *How teachers taught: Constancy and change in American classrooms (1890–1980)*. New York: Longman.

Dirección General de Desarrollo de la Gestión e Innovación Educativa (DGDGIE). (2012). *Análisis de impacto del PEMLE en secundarias: Resultados prueba ENLACE*. Mexico: Mimeo.

Doyle, W. (1983). Academic Work. *Review of Educational Research, 53*(2), 159–199.

Elmore, R. F. (1979/1980). Backward mapping: Implementation research and policy decisions. *Political Science Quarterly, 94*(4), 601–616.

Elmore, R. F. (1996). Getting to scale with good educational practice. *Harvard Educational Review, 66*(1), 1–26.

Freire, P. (1970). *Pedagogy of the oppressed*. New York: The Continuum International Publishing Group.

Fullan, M. (2015). *The new meaning of educational change* (5th ed.). New York, NY: Teachers College Press.

Giroux, H. A. (1983). *Theory and resistance in education: A pedagogy for the opposition*. South Hadley, MA: Bergin & Garvey Publishers.

Gladwell, M. (2013). *David and Goliath: Underdogs, misfits, and the art of battling giants*. New York/Boston/London: Little, Brown and Company.

Grindle, M. S. (2004). *Despite the odds. The contentious politics of education reform*. New Jersey: Princeton University Press.

Grossman, F. (2010). Dissent from within: How educational insiders use protest to create policy change. *Educational Policy, 24*(4), 655–686.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.

Hawkins, D. (1974). I, Thou, and It. In The Informed (Ed.), *Vision: Essays on learning and human nature* (pp. 49–62). New York: Agathon Books.

Holt, J. (1991). *How children learn*. City of Westminster: Penguin Education.

Hooks, B. (1994). *Teaching to transgress: Education as the practice of freedom*. New York: Routledge.

Instituto Nacional para la Evaluación de la Educación (INEE). (2006). *El Aprendizaje del Español y las Matemáticas en México: Sexto de primaria y tercero de secundaria*. México: INEE.

Instituto Nacional para la Evaluación de la Educación (INEE). (2007). *PISA 2006 en México*. México: INEE.

Instituto Nacional para la Evaluación de la Educación (INEE). (2008). *El Aprendizaje en tercero de secundaria en México. Informe sobre los resultados de Excale 09, Aplicación 2008*. México: INEE.

Instituto Nacional para la Evaluación de la Educación (INEE). (2014). *Cifras Básicas: Educación Básica y Media Superior*. México: INEE.

Instituto Nacional para la Evaluación de la Educación (INEE). (2015). *Panorama Educativo de México: Indicadores del Sistema Educativo Nacional 2014*. INEE: Educación Básica y Media Superior. México.

Leadbeater, C. (2012). *Innovation in education: Lessons from pioneers around the world*. Qatar: Bloomsbury Qatar Foundation Publishing.

López, D., & Rincón Gallardo, S. (2003). *La capacitación artesanal y la profesionalización de la labor docente en Posprimaria*. México: CONAFE.

Mehta, J., Schwartz, R. B., & Hess, F. M. (2012). *The futures of school reform*. Cambridge, MA: Harvard Education Press.

November, A. (2012). *Who owns the learning? Preparing students for success in the digital age*. Bloomington, IN: Solution Tree.

Rincón Gallardo, S., Cámara, G., Santos, A., Domínguez, E., & López, D. (2009). Valoración de la Puesta en Marcha de un Modelo Alternativo para Telsecundarias Unitarias y Bidocentes." In PREAL. *Reformas Pendientes en la Educación Secundaria*. Santiago, Chile: Programa de Promoción de la Reforma Educativa en América Latina y el Caribe - Fondo de Investigaciones Educativas.

Rincón-Gallardo, S. (2012). La tutoría para el aprendizaje independiente como práctica y principio rector del cambio educativo en escuelas públicas mexicanas. *Revista DIDAC, 61*, 58–64.

Rincón-Gallardo, S. (2013) *Educational change as a social, political, and instructional movement: Learning and expanding a countercultural practice in mexican public middle-schools*. Doctoral thesis, Harvard Graduate School of Education, Cambridge, MA.

Rincón-Gallardo, S. (2015). Bringing a counter-hegemonic pedagogy to scale in Mexican public schools. *Multidisciplinary Journal of Educational Research, 5*(1), 28–54.

Rincón-Gallardo, S., & Elmore, R. (2012). Transforming teaching and learning through social movement in Mexican public middle schools. *Harvard Educational Review, 82*(4), 471–490.

Rochon, T. R. (1998). *Culture moves: Ideas, activism, and changing values* (p. 1998). Princeton, NJ: Princeton University Press.

Salinas, D., & Fraser, P. (2011). *Educational opportunity and contentious politics: Emergence and development of the chilean student movement*. Paper submitted to the Berkeley Review of Education. Presented at the 56th annual conference of the comparative and international education society, San Juan, Puerto Rico.

Santos, A. (2001). Oportunidades educativas en telesecundaria y factores que las condicionan. *Revista Latinoamericana de Estudios Educativos, 31*(3) (July–September), 11–52.

Santos, A., & Carvajal, E. (2001). Operación de la Telesecundaria en zonas rurales marginadas de México. *Revista Latinoamericana de Estudios Educativos, 21*(2), 69–96.

Sarason, S. (1982). *The culture of school and the problem of change*. Boston, MA: Allyn & Bacon.

Stein, E., Tomassi, M., Echebarría, K., Lora, E., & Payne, M. (2005). *The politics of policies. Economic and social progress in Latin America*. Cambridge, MA: David Rockefeller Center for Latin American Studies and Harvard University.

Unidad de Planeación y Evaluación de Políticas Educativas (UPEPE). (2012). *Análisis del Impacto del Programa para la Mejora del Logro Educativo en las Escuelas Secundarias*. Mimeo.

Vidal, Rafael, & Díaz, M. A. (2004). *Resultados de las Pruebas PISA 2000 y 2003 en México*. México: Instituto Nacional para la Evaluación de la Educación.