LEARNING FIRST

High-quality curriculum and system improvement

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This project is a collaboration between Learning First and the Johns Hopkins Institute for Education Policy.

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Learning First and Johns Hopkins Institute for Education Policy conducted the analysis presented in this report. The interpretations of how these systems operate are the authors', and do not necessarily represent the views or official positions of governments or officials in the systems analyzed.

Series overview

Across the world, too few education policymakers have seen curriculum as a powerful lever for reforming schools. That might seem surprising. After all, "curriculum" is what we teach, and what we teach surely matters to student learning. As leading curriculum researcher Dr David Steiner of Johns Hopkins University in Baltimore puts it: "What we teach isn't some side bar issue in American education: it is American education".[1]

Yet for some years, curriculum has been overlooked as a pillar of school improvement strategy. Education reform has focused on teacher quality, and often seen curriculum as simply a tool that teachers use. Curriculum's role as a battleground for ideologues has also led policymakers to avoid the subject. But that is beginning to change.

The research is increasingly clear that quality curriculum matters to student achievement. What's more, there is emerging evidence to suggest that quality curriculum has a larger cumulative impact on student achievement than many common school improvement interventions – and at a lower cost.

Much recent research on the impact of curriculum on student learning has emerged from the US since the development of the Common Core State Standards. While the definition of curriculum remains contested (see our working definition overleaf), this research focuses on content-rich, standards aligned curriculum materials, especially textbooks. Several US states and districts, such as Louisiana, have begun to develop systems to identify and make available high-quality curriculum materials – and the approach seems to have paid off. The experience of these American states and districts reinforces some of Learning First's research findings in high-performing systems such as Finland, Singapore, Japan, Hong Kong, and British Columbia. In these places, high-quality curriculum is always part of the story.

Of course, what we teach matters. But what does this mean for educators and policymakers? How do we ensure that schools have the support they need to select or develop high-quality curriculum aligned with rigorous standards for student learning? How do we narrow the gap between the achievement standards that sit on department of education websites, and what is *actually taught* in classrooms? How can policymakers meaningfully engage with teachers, support and make the most of their instructional expertise, and encourage uptake of quality curriculum? What is there to learn from how other systems have designed and implemented standards and curriculum, and what are the implications for related policy levers, especially initial teacher education, ongoing teacher professional learning, and student assessments? Finally – and critically – how do we define high-quality curriculum in the first place?

The answers to these questions have profound implications for education policy in Australia, the United States, and around the world. This series of reports, – a collaboration between Learning First and Johns Hopkins Institute for Education Policy – draws on international research to help inform the conversation.

This report, *High-quality curriculum and system improvement*, focuses on why states and districts need to focus on curriculum as a vehicle of student success, and how that focus would contribute both to improved student learning and to equity. It sets out current approaches to curriculum development and implementation and implications for school improvement in the United States and Australia. Finally, it provides systems across the world with a framework to develop a strategy for system improvement that supports and encourages the implementation of quality curriculum at scale.

[1] Steiner, 2017, p. 11.

Box 1: Defining "curriculum"

"Curriculum" is a notoriously contested term. In a recent blog post, Chester E. Finn, Jr. of the Thomas B. Fordham Institute likened the line between standards and curriculum to "the pavement on Copacabana Beach. No two people describe it in the same way".[2] Such varying definitions within and among school systems muddy the waters of an already complex debate about the role of curriculum in school improvement. A shared understanding of the term "curriculum" is required before any collective consideration of its impact on student learning can occur.

When Australians talk about "curriculum", they tend to be referring to the Australian Curriculum or its state derivatives – frameworks of standards, alongside content descriptions, general capabilities and cross-curriculum priorities.[3] Conversely, when Americans talk about curriculum, they tend to mean textbooks or other day-to-day instructional materials. The definitions below are rooted in the American context to more usefully support international readers' interpretation of the research set out in this report series:

Standards are expressions of the goals of student learning, typically at the state or federal level. Standards typically aim to outline what we expect students to know and be able to do at different stages of schooling, usually expressed in year levels.[4] Examples of standards include Achievement Standards of the Australian Curriculum, and the CCSS in the United States.

Curriculum is the means to achieve the goals expressed in the standards. It is the teaching and learning program, and can include lesson plans and activities, scope and sequence documents, textbooks, computer programs, and even related pedagogical advice and embedded formative assessments.

[2] Finn, Jr., 2017.
[3] For more information, see https://www.australiancurriculum.edu.au/f-10-curriculum/structure/
[4] Houchens, 2017.

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1 Introduction: quality curriculum for impact and equity

After decades of scarce attention to the critical role of curriculum, numerous national and state-level initiatives now endorse the implementation of quality curriculum as an important approach to boosting student success Leading research demonstrates the powerful and positive impact of high-quality curriculum on academic learning.[5] High-quality curriculum materials are aligned with high standards, are academically rigorous and knowledge rich, and support research-based, effective pedagogy.[6]In recent years the United States has begun to see the creation of both traditional and Open Education Resources (OER) curricula that meet this definition.

Quality curriculum can also have implications for equity, helping to overcome the very high correlation between family wealth and students' academic achievement. Unfortunately, we too regularly compound these inequities with low-quality curriculum. When curriculum materials are not aligned to high-standards and are not academically rigorous or knowledge rich we essentially dumb-down what we teach to low-income children so they cannot learn at the same level as their more affluent peers.

Some districts and charter schools appear to demonstrate an understanding of this crisis. For example, Sonja Santelises, superintendent of Baltimore city schools, noted in a recent *Washington Post* opinion article, "The research on the inequities in school curriculum is staggering. An analysis conducted by the Education Trust recently found that a significant percentage of educators are not delivering rigorous content in math – the problem is especially acute in schools with concentrations of poverty, where families aren't able to supplement the lack of rigor." [7] Another example comes from Chicago Public Schools, which introduced AP (Advanced Placement Courses) across its high schools in 1997, leading to best-in-class improvements in assessment results and college readiness.[8] For their part, the top-performing charter management organizations serving deeply underprivileged children, such as Success Academies, Achievement First, and Icahn, all use highly rigorous, content-rich academic curriculum.[9]

Some universities have also begun to remediate the poor academic preparation of entering freshmen. For example, the Princeton University Preparatory Program (PUPP) for low-income students includes "a rigorous college preparatory curriculum that requires attendance at its annual summer institute and after-school enrichment activities for all three years of the program."[10] An ETS study shows that more than 70 per cent of the first 10 PUPP student cohorts have earned a college degree compared to a US national average of 10 per cent for low income students.[11]

These examples provide hope, but they are not mirrored in enough US states and districts or other school systems around the world. Partly this is because changing the curricular practices of an entire teacher workforce can be overwhelming. It requires ensuring that quality curriculum is available, and supporting and incentivizing teachers and leaders to implement quality curriculum in every classroom via a coherent approach to workforce, accountability and resourcing policy. This paper details some of the key steps systems must take in order to make these changes. The next section outlines current approaches to curriculum development and implementation in the United States and Australia, and the subsequent section provides a roadmap for how these systems, and others, can begin to develop a strategy for school improvement that features quality curriculum at its core.

[5] Steiner, Magee, & Jensen, 2018
[6] Steiner et al., 2018
[7] Santelises, 2017
[8] https://blog.cps.edu/2018/04/10/chicago-students-continue-make-progress/
[9] For a discussion of the curriculum at Success Academy, see Sahm, 2015
[10] Aronson, 2018
[11] "Results Princeton University Preparatory Program," 2018

2 Current approaches to curriculum development and implementation and implications for school improvement

The research is clear that quality curriculum has a positive impact on student learning and improves equity across school systems. And systems at the top of the international league tables – be it PISA, TIMMS or PIRLS – provide numerous examples of the successful development and implementation of high-quality curriculum in schools. Yet, the experience of many other school systems is different. The trend over past decades has been away from tight control over quality curriculum towards looser policies that allow for increasing variation in what is taught in schools.

Below, we provide examples from the United States and Australia of how two federal systems have taken very different legislative approaches to a similar end: teachers developing their own curriculum from a variety of sources, increasing their workload and increasing variability in the quality of what is taught in our classrooms (with the exception of just a few states). Other countries will have different legislative approaches and institutional arrangements, but readers in these countries may seem many similarities in the situation facing schools.

2.1 The United States

The United States' Constitution is silent on the federal government's role in education. Its Tenth Amendment devolves educational authority to individual states.[12] States interpret that power differently and exercise varying levels of control over education, including over the curricula that are used.

As reported in 2015 by Education Week, states are increasingly devolving their authority to approve textbooks and other curriculum to local school districts. At the time, only 19 states were classified by the Association of American Publishers as "adoption states" – those with the authority to review instructional materials and adopt an official list of "approved" textbooks and curricula.[13]

In Spring 2018, the Johns Hopkins Institute for Education Policy undertook a fresh study of state policies across the country. It found that several states had weakened their adoption laws since the Ed Week study – including Texas and Florida – permitting districts to select materials widely, outside the state's approved list.

Figure 1: Summary of State Instructional Materials Adoption Policies

Type of Policy	States
State Adoption, with Restrictive Policies to Limit District Choice	Nevada, New Mexico, Oklahoma, South Carolina, Tennessee, and West Virginia
State Adoption, with Weaker Policies to Limit District Choice	Alabama, California, Florida, Idaho, Louisiana, Oregon, Utah, and Virginia
State Adoption, with No Limit to District Choice	Mississippi, North Carolina, Texas
Local Adoption Only	Arkansas, Georgia, Kentucky, New Jersey

Note: States not indicated in the table leave adoption policies entirely at the discretion of local education districts

In fact, the chart overstates the number of adoption states. Nevada and Louisiana are not adoption states in any strict sense: Louisiana provides annotated reviews of instructional materials using a quality rubric,

[12] The 10th Amendment reads: "Each state retains its sovereignty, freedom, and independence, and every power, jurisdiction, and right, which is not by this Confederation expressly delegated to the United States, in Congress assembled."
[13] Gerwertz, 2015

and Nevada's adoption process involves districts' submitting materials to the state for approval.[14] West Virginia's policy will weaken in the 2019-20 school year by expanding districts' ability to choose non-approved materials. Kentucky maintains statutory authority to adopt textbooks, but has recently elected not to exercise its authority. Even the strictest adoption states offer ample choice to local school districts: in three of them (South Carolina, Tennessee, and West Virginia), districts can ask the State Board of Education for a waiver to enable them to use materials that are not on the official list.[15]

In summary, the current trajectory is towards states' exercising less authority over the curriculum taught in schools – whether by statute or by choice. The Louisiana Department of Education, for instance, has the statutory power to mandate curricula, but has chosen instead to partner with teachers and incentivize districts to implement quality curriculum – to good effect. But they are the only state in which we know that a majority of teachers are now using quality curriculum.

In other words, in the United States the central curriculum issue confronting states is this: teachers are typically developing their own curriculum, from a plethora of sources, with limited training on how to do this well.

2.2 Australia

Like the United States, Australia is a federal system that devolves responsibility to state and territory governments for the provision of education, including determining the curriculum. The Melbourne Declaration on Educational Goals for Young Australians, signed in 2008 by all Australian governments, enshrines the commitment that "Australian schooling promotes equity and excellence; and that all young Australians become successful learners, confident and creative individuals, and active and informed citizens".[16] The Melbourne Declaration guided the development of the Australian Curriculum, which includes eight learning areas (subjects) alongside seven general capabilities and three cross-curriculum priorities. Each learning area includes achievement standards that describe what students are expected to understand and be able to do at each year level, and content descriptions and elaborations that provide more detail about what is to be taught and how it might be taught.[17]

All Australian states and territories have implemented the Australian Curriculum, albeit in different ways and to varying degrees.[18] Several states have adopted the Australian Curriculum without significant variation. Others, including Victoria and New South Wales, have tailored the implementation of the Australian Curriculum to meet their specific requirements. For example, New South Wales publishes stage-based syllabuses that incorporate aspects of the Australian Curriculum while also including additional content.

However, the Australian education community does not commonly use the word "curriculum" in the same way as the US education community. The Australian Curriculum and its state derivatives do not constitute the full "means to achieve the goals expressed in the standards" as the definition provided in this report series suggests. "Curriculum" in Australia is more commonly used to refer to sets of achievement standards, general capabilities, content descriptions and elaborations, that set out information about what students should know and be able to do, along with some information about what should be taught and

[14] "Department of Education Louisiana Believes," 2018; "Testing of Pupils and Graduation," 2018
[15] "Tenn. Code Ann. § 49-6-2206," 2018; "Textbook Adoption Regulation," 2000; "West Virginia Code," 2017
[16] The Shape of the Australian Curriculum V4 – p.5
[17] ACARA, n.d.
[18] Australian Curriculum, Assessment and Reporting Authority, 2016

how. This falls well short of constituting the teaching and learning program that structures and informs day-to-day classroom practice.

Australian schools have significant work to do to translate the Australian Curriculum (or the relevant state-derivative) into curriculum plans at the school and classroom level. Schools typically have the autonomy to develop their own whole-school curriculum plans, and teachers have the autonomy to develop their own lesson plans and select relevant instructional materials, including novels, software programs, textbooks, worksheets and other activities. Some schools and teachers have the time and capability to do this well – but many do not.

States and territories provide varying levels of support for school level curriculum development and implementation, including through the provision of examples of whole-school curriculum plans and lesson plans, and examples of student work. Yet few provide comprehensive, quality curriculum for schools and teachers to adopt or adapt[19], nor do they provide quality assurance processes for published curriculum available on the market. In this context, many Australian teachers find themselves in a similar position to their American colleagues – drawing on a range of sources of varying quality to make up their own curriculum. The result is that not all students are exposed to quality curriculum that reflects the achievement standards and general capabilities set out in the Australian Curriculum. The message from teachers is clear: they want more support to implement the curriculum.[20] How, then, can school systems effectively support and encourage schools to consistently implement quality curriculum in all classrooms? This question is addressed in the next section.

[19] An exception to this is the Queensland State Government, which has developed comprehensive standards-aligned curriculum, including lessons guides and plans, through the Curriculum to Classroom (C2C) initiative. For more detail on C2C, see Magee & Jensen, 2018a

[20] See, for example, Australian Curriculum, Assessment and Reporting Authority, 2016

3 Road-map to support widespread implementation of quality curriculum

As system leaders are increasingly aware, achieving widespread implementation of quality curriculum is hard. It requires significant policy reform in several interrelated areas. Moving from the status quo to a situation where students in every classroom are exposed to high-quality curriculum requires significant change in the professional practices of teachers and school and system leaders. Achieving this kind of behavioural change at scale is complex, so we have provided steps that school systems can take to help support the success of curriculum reforms by ensuring that teachers and leaders:

- Understand the reason for the change.
- Understand what they need to do differently.
- Have the skills, capabilities, support and incentives to change.[21]

Several US states have begun the work to transition from the status quo of teachers developing their own curriculum in an ad hoc manner from a variety of sources. For example, a Council of Chief State School Officers (CCSSO) initiative is working with eight states as work to implement quality curriculum at scale.[22] Drawing on this work, this paper begins to establish a road map that outlines the operational and strategic components of any effort to implement high-quality curriculum. The overall schema (see Figure 3 below), is followed by an overview of each component drawing on examples from the US and seeking to distil initial lessons that are relevant to other systems internationally.

Figure 3: Roadmap of key operational and strategic components to implement high-quality curriculum

Implementing High-Quality Curriculum and Professional Learning **A State-Level Road Map of Key Components**[23]					
Preparation:	Component 1: alignment	Component 2: evaluation	Component 3: building support	Component 4: putting into practice	Component 5: building capacity
A: Legal Review **B: Temperature Review** **C: Adoption Cycles**	What definition and criteria will be used to determine alignment with standards and the quality of curriculum?	What process will be used to vet and validate high-quality curriculum?	How will the system communicate the need for quality curriculum, and encourage and build allies around its selection and use?	How will the system encourage curriculum implementation through student assessment and teacher, school and district accountability?	How will the system build capability for curriculum implementation through the provision of high-quality professional learning?

[21] Basford & Schaninger, 2016; Kotter, 1995; Lawson & Price, 2003; Senge, 2006, 2012.
[22] Dr David Steiner is serving as a consultant to this project and has visited the majority of the involved states, including Delaware, Massachusetts, Mississippi Nebraska, New Mexico, and Tennessee.
[23] This table is based in part on a document made public, but not published, by the State Department of Education in Mississippi in June 2018. They have no responsibility for this version of the table, nor the multiple changes the author have made to re-purpose the table for this paper.

Preparation

A clear analysis of the current situation is required before significant change can be undertaken. Of particular importance is the legal and regulatory framework that can greatly impact what change is possible; a stakeholder analysis that will shed light on the political economy of reform steps; and the policies currently impacting curriculum changes in systems.

Legal Review

The first step is for states to review the relevant current statutes and regulations related to the selection of curriculum – although they may chose *not to use* them to impose specific curricula in school districts. Specifically:

- Are there any statutory or regulatory barriers to state action on curriculum?[24] (For example, are there any restrictions on state involvement in the procurement of specific curriculum, such as textbooks?)
- Do current adoption laws and regulations define textbook or curricular quality favorably, i.e., in a way that opens the path to high-quality curriculum?
- Will additional refinement of statutory or regulatory language be necessary to implement the state's plan? (For example, New Mexico's existing regulations reference "research-based" as a criteria for new materials – but fail to define the term)

Temperature Review

The state education authority (SEA) also needs to conduct a "temperature review" of key stakeholders prior to formulating policy.

This includes:

- The likely level of gubernatorial and legislative support and the resulting impact on any proposed policy path.
- The status of relations between states and districts and the likely reaction of the largest districts to the proposed policy.
- The existence, if any, of districts that have already implemented quality curriculum. Assuming they have had a positive experience, such "early-adoption" districts could become important allies.
- The existence of identified groups of teachers who could serve as natural ambassadors for the proposed changes.
- The fiscal resources – if any – that could support policy changes. For example, are there funds that could convene and train teachers to become effective evaluators of curriculum, or that could support professional development on new curriculum?

This preliminary work forms the context within which the state formulates its plan to support the implementation of quality curriculum at scale. Insufficient attention to this "temperature read" can create major obstacles down the road.

[24] In the US, this may require legal opinion from the state's Attorney General's office. To give a federal example, the US Constitution's prohibition on mandating curriculum at the state level was interpreted such that it was **not** a barrier to the US Dept. of Education granting funds to New York state to establish an online standards-based curriculum (EngageNY).

Adoption Cycles

School districts in the United States often set adoption cycles in each of the major subject areas (math, English Language Arts, social studies and science). These may occur in five-or seven-year increments and be designed so that only one subject comes up for adoption in any given academic year. The SEA will want to identify the most important subjects and ascertain how many districts are due to review their materials adoption in those subjects, and in which year. This information will be important for mapping out the SEA's target for levels of state-wide adoption of high-quality curriculum against a realistic timeline, enabling the state to create, in essence, a pilot group of districts that will be viewed as potential early adopters.

Component 1: alignment of standards with high-quality curriculum

While the John Hopkins Institute for Education Policy defines quality curriculum as "Instructional materials that are aligned to high standards, academically rigorous, knowledge rich and supportive of research-based, effective pedagogy," a state should consider multiple ways of judging whether a particular curriculum is of "high-quality" before determining the best for its own context. The wide variety of possible methods includes:

1. Judged by an *independent evaluator* (see examples from EdReports and Louisiana) to be of high quality.[25]

2. Supported by *research* to be effective. Sources of such research include the What Works Clearing House (WWCC) and the ESSA tool. Levels of research can include, in descending order of rigor, Randomized Control Trial (RCT), Quasi-Experimental, and Correlational.[26]

3. Judged by the ***state's criteria*** for quality – such as state standards alignment based on an Instructional Material Evaluation Tool (IMET)[27] analysis, evidence of culturally relevant material, and academic rigor.

4. Judged by the *district* to align with the state's academic standards.

Tennessee's draft proposal for a definition of quality curriculum in English Language Arts offers a strong example of method 2. It notes that the chosen curriculum must meet state-established standards in: Instructional Shifts (including "building knowledge through content-rich literary and informational texts"), Standards, High-Quality Instruction, Foundational Skills, and Additional Components.[28] While many of these criteria can be traced back to the Common Core State Standards, Tennessee has selected from among them and added their own.

However the state defines quality curriculum, it must also consider two independent but related issues: first, who will determine the "fit" of any given curriculum to the definition of quality curriculum? The SEA? Teachers convened by the SEA? Districts? Districts, but subject to review by the SEA? Second, what are the process and criteria for doing so?

Here, the SEA needs to consider both who are the key decision-makers and the complexity of using any selected criteria. For example, the Instructional Materials Evaluation Tool (IMET) tool enables a judgment of curriculum alignment with the Common Core State Standards, but it requires extensive training and a

[25] "Department of Education Louisiana Believes," 2018; "Evidence-Rich. Educator-Led. Free.," n.d.
[26] "Evidence for ESSA," n.d.; "Policy Brief ESSA and Evidence: Why it Matters," 2016; "What works clearinghouse," n.d.
[27] IMET is a tool to evaluate a textbook or textbook series for alignment to the shifts and major features of Common Core State Standards, See "Achieve the Core," 2013
[28] See "Ready with Resources: Empowering Educators with Strong Instructional Materials" TN Department of Education, 2018. Distributed to district personnel at TN's SEA convening, Gatlinburg, TN. September 11, 2018.

considerable time commitment. By contrast, EdReports' evaluations of math and English Language Arts curricula are ready for rapid use – but may carry the liability of appearing to outsource the state's decisions.[29]

Component 2: the evaluation process

Procurement Process: Criteria

The state or district may decide to procure quality curriculum from the market. The first step in the procurement process is to establish the criteria that will be made public to potential vendors, including an indication of the weight assigned to each criterion. While the criteria that pertain to quality, such as standards-alignment, are of course of paramount importance, states should also think through such issues as format (digital, print, OER), support for student subgroups (such as special education students and English Language Learners), price, and the availability of related professional development.

Specific decisions include:

- Will the state or district require the materials to be available in multiple formats, including paper as well as digital?
- What materials, if any, must be specifically designed for special needs and/or English Language Learners?
- Will the state or district give points for embedded assessments (see Component 4, below)?
- Will the state or district include teacher-scaffolding in its evaluation?[30] (For example, the Guidebooks English Language Arts curriculum from Louisiana has as many as ten "flashcards" – suggestions for teachers on how to teach the material – for each lesson.)

Procurement Process: Request for Proposals (RFP)

The RFPs must be designed to attract vendors of quality curriculum. The Johns Hopkins Institute for Education Policy has published a paper on this topic with respect to district RFPs, but the same applies at the state level. It found that long, unclear or convoluted RFPs deter high-quality submissions, along with outdated technology requirements and the inclusion of specific requirements written so that only a preferred provider could quality. Conversely, the following factors were found to drive high-quality submissions:

- Language that lays out a clear scope of work and evaluation criteria.
- A requirement that independent reviews highly rank the curriculum.
- The inclusion of technology requirements that accommodate newer, more nimble curriculum providers.[31]

The Evaluation

As indicated above, the SEA needs to have determined who will be evaluating instructional materials and, additionally, the role the SEA will play – if any. It can be involved in several ways, including:

- Defining quality curriculum (probably by state regulation) and then devolving the process to the districts. In this model, the state could then automatically defer to the districts' choices, audit their

[29] EdReports has a "state-facing" process that enables it to work with any given state. The authors are not in a position to judge the efficacy of this process.
[30] "Department of Education Louisiana Believes," 2018
[31] Johns Hopkins Institute for Education Policy, 2018

processes or review their decisions. In any case, the state might offer SEA training of the districts' reviewers.

- Defining quality curriculum as well as convening and training reviewers comprised of teachers and district curriculum leaders, using a screening device such as EdReport or IMET. The results can be used to create a state-wide adoption list setting out quality-assured curricula.
- Defining quality curriculum and then partnering with selected teachers and an external institution such as EdReports, a university, or a Regional Education Lab (REL), to screen curricula.

Component 3: building support for the selection and use of quality curriculum

As mentioned above, choosing curriculum in the United States has become largely a district and even classroom matter: research suggests that many of the nation's individual teachers determine their own materials comprised of varying sources.[32] Therefore, any sustained effort to enlist district support in making a major shift in the direction of implementing new, quality curriculum will require a deliberate, well-planned, and sustained communication effort. It requires a communication plan, district incentives, and deliberate efforts to build allies for change. Each element is discussed in more detail below.

- **Communication Plan.** The communication plan could include dedicated forums at which district superintendents and curriculum leaders learn about the growing body of research and the specific ways in which quality curriculum can reduce educational inequity.[33] The SEA website can host on-line versions of this research and promote their readership across the state. The SEA could conduct in-depth information and listening sessions for its largest districts.

- **Incentives.** Districts do not find the prospect of changing curriculum inherently attractive. They may be wary of upsetting teachers, unconvinced by the merits of switching, worried about costs, or simply resentful of any intrusion on business as usual, which may involve upsetting long-standing relationships with specific curriculum publishers and vendors. Thus, the districts may need both positive and negative incentives, such as:
    - Reduction of "red-tape" in the procurement process for districts that adopt quality curriculum
    - Discounted or even free professional development for teachers in districts that adopt quality curriculum
    - Bonus points for discretionary, SEA-sponsored grants to districts that adopt quality curriculum
    - Public recognition of lead adopters and of early wins, such as strong academic results from adopting districts.

- **Building Allies.** While district leadership may be on board for quality curriculum, it may need support in persuading teachers. One avenue is to conduct teacher surveys and even focus groups designed to surface teachers' opinions about their current curriculum, and the degree to which they do – and don't – actually use it. The Johns Hopkins Institute for Education Policy has conducted numerous such studies, and has found that most teachers are not satisfied, and a substantial percentage are seriously dissatisfied, with their current curriculum, and – presumably as a result – do not actually use it. In short, teachers can become major allies in this transition work.

[32] See, for example, Kaufman, Thompson, & Opfer, 2016; Steiner, 2018
[33] The Johns Hopkins Institute for Education Policy has conducted some dozen research briefings at multiple state/district convenings across the United States, and has developed appropriate material for such presentations.

Component 4: putting it into practice: assessment, teacher performance, school accountability

Assessment

Teachers want their students to do well. So, the relevance and content of student assessments are a driver of teacher practice. This is especially true in the high-stakes environments that exist within many US states.

The content and use of student assessments is a potentially critical element of how SEAs can implement quality curriculum in schools. If assessments are causally linked to the quality curriculum then it can greatly increase implementation. Conversely, if teachers believe that curriculum has little relationship to assessment results, they have far less incentive to use a specific curriculum and more likely to choose different instructional materials. What can this mean in practice?

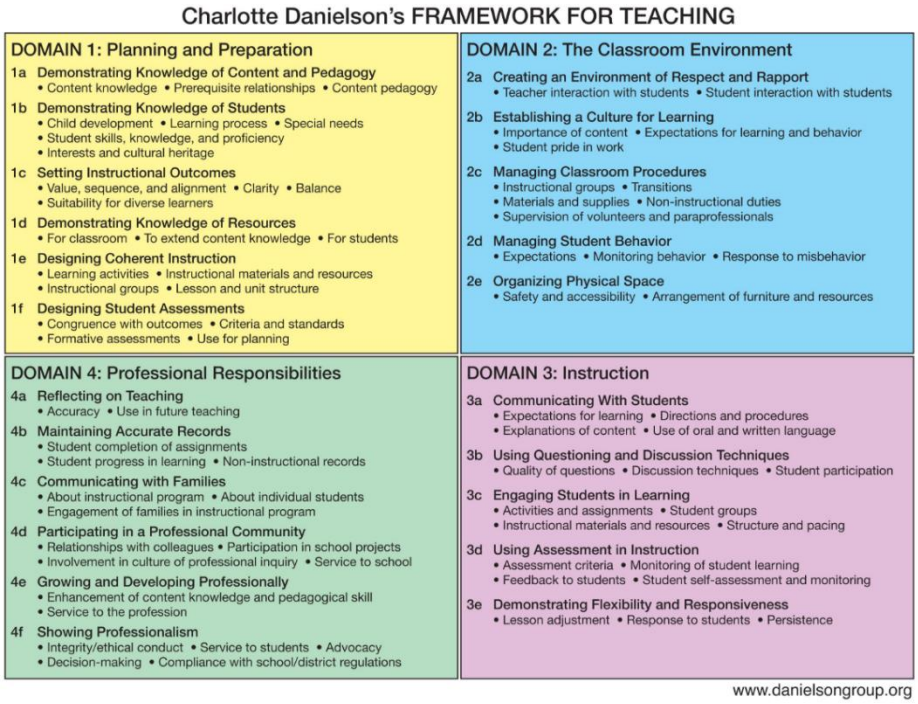
- Teachers are motivated when they see student learning reflected in stronger academic results on state assessments. In Duval County in Florida, implementation of EngageNY curriculum yielded outsized student gains on the summative Florida state tests in math and English Language Arts.[34] This has served not only to help Duval County maintain a high level of fidelity, but also to motivate other Florida districts to follow suit.[35]
- Some curricula provide standards-aligned, embedded interim assessments that teachers can trust as reasonable predictors of student success on summative assessments, including state assessments. Zearn Math, for example, offers constant assessments of specific math skills that are closely aligned with grade-level standards in math in the Common Core State Standards.[36] When students can succeed in these interim tests, teachers can be reasonably confident they will do so on the summative assessments.
- Independent companies also offer interim assessments that claim to be highly correlated with state standards-aligned assessments in terms of students' results. Two of the best known are i-Ready and Measures of Adequate Progress (MAP).[37] If teachers note stronger results on such interim assessments through the use of high-quality curriculum, they are, once again, more likely to stick with using such materials.[38]
- Teachers can construct their own standards-aligned assessments to create evidence of student progress (for one guide on doing this, see here).

Teacher Performance Management

Teacher evaluation in the United States usually rests upon school principals' classroom observations.[39] Unfortunately, few observational rubrics pay attention to teachers' use of any specific curriculum, nor the degree to which that curriculum is being implemented with fidelity. Here, for example, is the most popular rubric, the "Danielson Framework" (see in particular, "Domain 3").

[34] Engage NY, 2018
[35] "Q&A: How Duval County Uses Standards-Aligned Tools to Drive Achievement," n.d.
[36] See https://www.zearn.org/
[37] See https://www.curriculumassociates.com/Products/i-Ready and https://www.nwea.org/map-growth/
[38] The Johns Hopkins Institute for Education Policy analyzed the research supporting the predictive validity of these two assessments and found somewhat mixed results – a somewhat surprising finding given their extensive use across the United States. Bjorklund-Young & Borkoski, 2016 and Engage NY, n.d.
[39] In a few states such as Louisiana, Tennessee and New Mexico, and in districts such as Washington DC, teachers' students' performance on state assessments also make up a major component of such evaluations.

Figure 4: Charlotte Danielson's Framework for Teaching



Source: See The Danielson Group, 2017

Nevertheless, SEAs can alter the observation rubrics to include fidelity of implementation of the districts' instructional materials. Observational tools exist to assess the standards-alignment; the best known is the Instructional Practice Guide (IPG).[40] What we need, however, is a curriculum-specific version that could be incorporated into the principals' observational rubric. To date, we are not aware that such an instrument exists in the US context. Constructing one would not be difficult. Quality curriculum include clear timelines for each unit, often at a quite granular level. Knowing the timelines prescribed by the curriculum, principals could correlate teacher practices and discuss, with their teachers, the reasons for observed departures.

ESSA's School and District Accountability

Under the Every Student Succeeds Act (ESSA)[41], every public school in the United States must be evaluated against a series of measures that include academic outcomes. Three categories of school, identified below, must produce needs assessment plans and/or improvement plans that identify strategies to improve student outcomes:

- Schools that have especially weak student performance are labelled Comprehensive Support and Intervention (CSI) schools. These are schools that fall in the bottom 5% of all schools receiving federal aid for underprivileged students – known as Title 1 schools. CSI schools must produce a needs assessment plan that identifies the strategies by which they will improve their student outcomes.
- Schools that have underperforming sub-groups of students, labelled Additional Targeted Support (ATS) schools.

[40] "Instructional Practice Guide," n.d.
[41] In December 2015, Congress passed the ESSA, replacing No Child Left Behind (NCLB) as the main federal law governing k-12 education in the United States.

- Targeted Support and Intervention (TSI) schools have at least one student subgroup performing at or below the level of CSI school. Subgroups include: economically disadvantage, racial/ethnicity, student with disabilities and English learners.[42]

The relevant public school district must work with CSI, ATS and TSI schools on school improvement plans, and approve all final plans. In the case of CSI plans, the state education department must also approve them. Given the strong research base that links quality curriculum to improved student academic results, the most effective way to link quality curriculum to school accountability is for the state and/or district to require the inclusion of quality curriculum and the integration of professional development into these schools' needs assessment plans and/or improvement plans.

Because the state must review all CSI improvement plans, it can use the regulatory process to require that all these plans include selection and implementation of quality curriculum – and evidence that this has been accomplished. The state's ability to do this effectively depends upon whether it has already completed the necessary work in terms of statute, regulation, communication, and setting of incentives outlined above.

Parents and Community

Involving and communicating with parents represents a critically important element in successfully providing teachers with incentives to implement quality curriculum. Parental confusion over the novel forms of homework and assessments created political opposition to implementation of the Common Core State Standards. By contrast, states such as Louisiana have brought parents along as partners in placing Eureka (in math) and Guidebooks (in English Language Arts) into the great majority of schools, assuring the success of these efforts. A dedicated Louisiana website informs parents about what their children are expected to learn and provides materials that parents can use at home to support their children's learning.[43]

Louisiana also provides guidance to its public school districts on effective communication with parents, specifically advocating that each district create a "Parent and Family Engagement Policy" that is *required* for all schools receiving Federal Title 1 funding (given to schools with higher percentages of at-risk students).[44] A full description of each school curriculum is a mandated element.

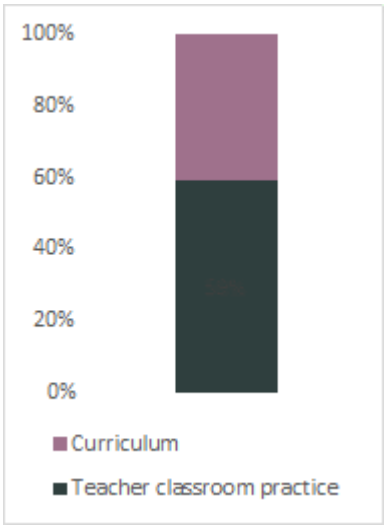
District-level communications plans should be multifaceted and include emails, webinars, in-person meetings, and focus groups to "take the temperature" of parental satisfaction with new instructional materials.

Component 5: capacity building for effective implementation

Even the highest-quality intended curriculum will not improve student outcomes to the greatest extent possible if it is not effectively implemented in classrooms. Indeed, strong research indicates that more than half of the potential impact of quality curriculum can be lost if teachers do not implement it with fidelity. Figure 5 shows the results of employing a combination of research-based curriculum materials and curriculum-based professional development on student achievement. Teachers' classroom practice contributes 59% of the effect on student achievement whereas high-quality curriculum contributes 41%. This shows that teacher practice truly matters in the effective implementation of the high-quality curriculum.

[42] "New Hampshire Department of Education," n.d.
[43] "Department of Education Louisiana Believes," 2018
[44] "Department of Education Louisiana Believes," 2018

Figure 5: Effect size of research-based curriculum materials and teacher classroom practice on student achievement



Source: Taylor et al., 2015

Teacher practices do not simply change overnight: habits of instruction run deep, and an effective curriculum does not guarantee effective instruction. Multiple research studies, in fact, illustrate the varieties of implementation that can follow – and the resulting academic consequences. For instance, in a multi-district study of the implementation of Core Knowledge Learning Arts, a high-quality, content-rich English Language Arts curriculum, researchers found that very different impacts on student learning outcomes were correlated to levels of professional development and fidelity of implementation.[45]

States and districts can therefore increase the odds of strong student performance by directing professional development dollars towards supporting specific high-quality materials. The education non-profit, TNTP, reports that in the United States, districts spend nearly $18,000 a year per teacher on professional development, and yet this expenditure has only very modest impact upon students' academic achievement (only three teachers in 10 showed a meaningful rise in their impact).[46] Unfortunately, the TNTP report underplayed that professional development needs to focus on delivering instructional content more effectively, not on generic practices for teaching nothing in particular.

Therefore, if a state (or district) hopes to realize the full benefit of implementing quality curriculum, it must align professional development accordingly and ensure quality delivery. The sources of professional development will vary. They may include professional development offered by the instructional materials vendor, a third party that has been approved by the vendor, state- or district-trained team, or an independent party. In theory, professional development offered directly by the curriculum vendor should be the strongest. However, leading adults to change behavior involves understanding teacher culture in varied settings, school constraints, student populations, and district priorities. For example, the Louisiana Department of Education found that districts tend to value the local marketplace over national vendors.[47] To determine an effective approach to the provision of professional development, states should work closely with districts, understand their context and listen to their concerns.

The state or district's approach to professional development should be formalized. A strong example comes once again from Louisiana. Its Vendor Guide[48] identifies vendors who specialize in helping districts and schools to design and implement a cohesive academic system focused on high-quality curriculum,

[45] Steiner, 2017
[46] TNTP, 2015
[47] Magee & Jensen, 2018b
[48] Louisiana Department of Education, n.d.

professional development, and assessment. It specifies that successful implementation of high-quality curriculum and assessments requires:

1. **Initial support:** the provision of pre-service professional development for teachers and leaders that builds their familiarity with the structure, approach, and key components of high-quality curricula and assessments.
2. **Ongoing, focused coaching:** Building teachers' and leaders' ability to use high-quality curricula and assessments; deepening knowledge of content and content pedagogy; building skill in using student data to meet the needs of all learners; and demonstrating how to use walk-through observations to foster teacher leadership, collaboration, and improved implementation. [49]

Note Louisiana's focus on the "use of the high-quality curricula" – as opposed to the generic teaching skills that often characterize professional development. The strongest professional development focuses not only upon a given curriculum, but also upon individual units within that curriculum – and provides granular support and guidance on how to teach that unit most effectively.

If its laws and regulations permit, the SEA can make state professional development funds contingent upon the district choosing a vendor from the approved state list. This should still allow districts considerable choice as to the final vendor, but avoid the situation in which districts simply choose the path of least resistance by going with a longstanding vendor.

3.1.1 Quality Control

By creating metrics for Vendor RFPs that prioritize support for teaching specific quality curriculum, states and/or districts will send a strong message to professional development providers that business as usual has been disrupted and a very different approach is now required. Metrics will include evidence that the offered professional development:

- Is focused on curriculum specific, granular, unit level or better (day-by-day) instruction.
- Takes into account a range of student learning levels at the start of instruction.
- Includes specific attention on how to use the curriculum to instruct special education and English Language Learners students effectively.
- Includes professional observations of real-time classroom teaching of the curriculum with feedback and follow-up observations.
- Is linked to a credible "before-and-after" evaluation of student learning in each teacher's classroom.

Larger districts may choose to initiate more than one professional model, and then engage in improvement science-based research to assess the comparative impact of each one.[50] The key is to evaluate important interim and summative outcomes, not inputs. As described above, a key differential in realizing the full impact of quality curriculum is fidelity of implementation, which is therefore a critical interim outcome. In the end, however, what matters most are the results achieved by students. Teacher surveys, teacher focus groups, and other forms of eliciting feedback can be other helpful sources of interim data on professional development.

[49] Magee & Jensen, 2018b
[50] Bryk, 2015

4 Conclusion: how quality curriculum can drive school improvement

This report series has argued that what we teach matters. It has demonstrated that quality curriculum can improve both student achievement and equity by ensuring that high expectations for all students, irrespective of race or socioeconomic background, are maintained in classrooms every day.

While it is true that the "design and spread of curriculum material is one of the oldest strategies for attempting to influence classroom instruction"[51], many systems internationally have a long way to go to ensure that all students are exposed to quality teaching of rigorous content. School improvement policies in many systems have focused on improving "teacher quality", but teacher quality does not exist in a vacuum: systems must be clear about their expectations for it, and must provide the appropriate support, resources and incentives for all teachers to meet these expectations. Banging the "teacher quality" drum in the absence of a coherent systemic approach to school improvement is little more than passing the buck to a group of professionals doing demanding and important work, often in very difficult circumstances.

One response to the research on the impact of curriculum is to ensure the availability of quality curriculum in a system. This is an important step, and one that is becoming more straightforward in the US, where the existence of curriculum review tools such as Edreports and IMET, as well as the availability of quality-assured open education resources, mean that states and districts have an increasing body of quality curriculum to draw upon.

In Australia and other systems, this is not necessarily the case. Australia has been counted among the high-performing school systems that share an emphasis on content-rich curriculum and commensurate standards and assessments.[52] Yet the existence of the Australian Curriculum and its state derivatives – frameworks of achievement standards, general capabilities and content descriptions – does not mean that all students across the country are being exposed to high-quality curriculum every day. Schools and teachers have significant work to do to translate the Australian Curriculum into rigorous teaching and learning plans. Australian systems and others like it, may find inspiration in the approaches to curriculum development and review taken by some US systems, and by the state of Queensland, which has developed the comprehensive Curriculum to the Classroom resource.[53]

As this report has demonstrated, however, simply ensuring the provision of quality curriculum is not enough to guarantee its implementation. System leaders everywhere know that the gap between the documented and enacted curriculum is often vast. Ensuring the implementation of quality curriculum in all schools requires teachers and leaders to change their behaviour – including what they teach, how they teach, and how they assess student learning. This change will disrupt the status quo, including relationships with long-term curriculum vendors and professional development providers. School systems must be prepared to challenge the status quo, and to pull a range of policy levers to ensure that schools and districts have the support and incentives they require to fundamentally change their curricular practice.

This report has set out a decision-making framework for system leaders to support development of a school improvement strategy that features quality curriculum at its core. It sets out five components preceded by a preparatory stage, during which systems must review the legal landscape and take the political temperature. Some systems will find specific legislative or regulatory barriers to action on quality curriculum, while others will find a complete absence of relevant legislation or regulation. All systems will

[51] Ball & Cohen, 1996
[52] Common Core, 2009
[53] For a more detailed explanation of Curriculum to the Classroom, see Magee & Jensen, 2018a

need to take the history of curricular and school improvement reform into account and plan to act based on what has succeeded in the past.

Then, systems must define what they mean by “quality curriculum”. As the definition in Box 1 explains, “curriculum” is a contested term that varies in use both between and within systems. It must be defined at the outset of reform, along with the criteria that will be determine the alignment of curriculum with the standards.

Secondly, systems must determine the process that will be used to vet and validate high-quality curriculum. Systems may adopt a curriculum procurement process designed to encourage high-quality submission, and an evaluation process designed to harness and support the expertise that exists within districts and schools.

Thirdly, systems must proactively build support for the selection and use of high-quality curriculum. They can do so by providing districts and schools with incentives such as discounted or free professional development, public recognition, preferential treatment in grant rounds, and reduction of “red tape” associated with the procurement of curriculum that is known to be high-quality. Systems can also build allies by listening closely to teachers’ and leaders’ experiences of curriculum, working to address their concerns, and providing further targeted support. Educators should be partners in school improvement reforms and taking the time to listen is critical. It is also important that systems have a communications plan that clearly articulates “why” they are making this change: they must support teachers and leaders to understand the research on the impact of quality curriculum on achievement and equity, and they must foreshadow how future approaches to school improvement will be informed by this evidence.

Fourthly, systems must create incentives for curriculum implementation through accountability policy, including approaches to student assessment, teacher performance management and school improvement planning. Student assessments must be designed to align with the curriculum, or else the implementation of high-quality curriculum will falter. Teacher observations, rather than being content-agnostic, should seek to determine the extent to which teachers are implementing quality curriculum in their day-to-day practice, and school improvement plans should show how schools are supporting teachers to do so through the provision of quality curriculum and opportunities for associated professional development.

Fifthly, systems must build capability for curriculum implementation through the provision of high-quality professional development. This report series has argued that curriculum and professional development must be connected instead of being treated as policy trade-offs. Indeed, the research shows that quality curriculum has a bigger impact on student learning when teachers are supported through professional learning to implement it with fidelity.

What teachers teach every day matters, but it should not be up to them alone to do the heavy lifting to translate the system’s vision for student learning into a detailed program of teaching and learning. Some teachers and school leaders are well prepared for this task and will relish the opportunity. However, many others are not prepared, do not have the time, and are daunted by the prospect. Systems, too, should be concerned by the prospect of every teacher in every school developing or selecting all their own curriculum. This represents a huge commitment of time that could be much better spent.

Developing a school improvement strategy anchored to quality curriculum is not a matter of the state or district telling teachers what to do. It is about providing high-quality instructional options by ensuring that quality curriculum is available in the first instance, and then ensuring that educators are supported and incentivized to make good curricular choices. This, in turn, will help ensure that all students, in all classrooms, are exposed to high-quality teaching of rigorous content aligned with a system-wide vision for what they need to know, do and understand in order to thrive in their future work and life.

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