What PLCs Get Results?

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“Telling can begin the process of delivering knowledge but it can never complete it, especially when the new knowledge departs significantly from existing understandings.”

Lauren Resnick, et al., 2010

A growing number of schools focus on some form of communities of practice as a key to improving their performance. Schools typically refer to communities of practice as professional learning communities (PLCs). These work in a variety of ways and have different goals, but only some achieve their intended results. The Institute for Learning (IFL) has been working with several school districts on solving wicked problems (complex problems without a clear solution) using continuous-improvement PLCs. Examples of wicked problems of practice include increasing student engagement and motivation for learning, increasing student performance for minoritized students, and increasing attendance. The PLCs with which we are working highlight the fundamental characteristics that our experience and research show position them to achieve their aims better. They focus on social learning opportunities that provide a space for educators to be reflective about problems of practice and consider small changes to try in their classroom based on their analysis of the artifacts of teaching and learning collected in their classrooms. By collecting and analyzing artifacts such as samples of student work, scribing of teacher questions and student responses, or even quick intentionally designed surveys, educators in these PLCs remain focused on the goals of improving their practice and improving learning opportunities for students.

Learning Is Social

Learning depends on interactions with others, and a high-quality learning environment actively encourages well-organized cooperative learning. While self-study and personal discovery are valuable, Resnick, et al., cautioned educators regarding the severe limitations in teaching as a steady diet of direct instruction, or telling, and invited practitioners to engage in communities of learning. The term professional learning community emerged from the concept “community of practice,” which has turned out to provide a useful perspective because it forefronts the benefits of social collaboration. Generally, PLCs are made up of educators who share a concern or a passion for something they do, and those involved learn how to do it better as they interact regularly and share what they have learned from research and classroom experiences. Membership in a PLC implies a commitment to collaboration to solve problems of practice as well as a commitment to use the best available research and knowledge to work on those problems in a particular community’s context.

The Goal

PLCs vary widely: Some are directive and tightly structured; others are less regulated. Because there are no agreed-on models, educators apply the label PLC to describe a variety of meeting structures that involve small groups of teachers and administrators coming together to discuss school-related problems. Most PLCs, however, are given the charge of improving teacher practice to render better learning outcomes for students. There is evidence from the research that well-developed PLCs have positive impacts on both teaching...
Utilizing Small Tests of Change and High-Leverage Practices in PLCs

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When teachers are working to acquire new instructional practices, particularly ambitious reforms, teachers tend to gravitate toward approaches that are congruent with their prior practices, or they focus on discrete activities, materials, or classroom organization (Spillane, 2009). Teachers’ collegial interpersonal relations such as those that occur in professional communities are a crucial site for learning (Franke & Kazemi, 2001; Gallucci, 2003; Little, 1982; Little, 2003; McLaughlin & Talbert, 2001; Smylie & Hart; 1999; Stein, Silver, & Smith, 1998; Stein & Brown, 1997) and research evidence says that teachers’ organizational context and patterns of interactions shape how they learn. When high-leverage practices are identified for study during a PLC, educators have the opportunity to engage in meaningful work around goal setting, pedagogy and content, and evidence of student learning.

The high-leverage practices identified for study during a PLC should be instructional practices that occur with high frequency. Ideally these practices are those used by teachers in different content areas so that students have multiple opportunities to use the same practices. The practice should also be one that provides teachers with insights into teaching and student learning and are therefore likely to provide a teacher feedback on their practice as teachers reflect and examine their practice (Grossman, Hammerness, & McDonald, 2009). The IFL recognizes the importance of specifying high-leverage practices that have been proven, based on research, to be of worth. The IFL also recognizes that teachers have limited time to identify resources that could be accessed for study during the PLC. To address these issues, the IFL has created four mathematics PLC modules of study for teacher use. Each module focuses on a high-leverage practice.

1. Facilitating Accountable Talk® Mathematics Discussions
2. Providing Opportunities to Write About Mathematical Reasoning
3. Using and Connecting Mathematical Representations
4. Promoting Intellectual Authority

The theory of learning in the PLC modules is that individual members of the PLC learn about the high-leverage practice together, design and try small changes of practice individually in classrooms, and come back together to share and study artifacts from their classroom. The IFL has worked to incorporate the use of improvement science into the PLC models. As members continue on page 8
Supporting Coaches to Lead Change Efforts at Their Schools

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As part of the Networks for School Improvement (NSI) work, I’ve been working directly with 8th grade coaches and their grade-level professional learning community (PLC) teams in the Dallas Independent School District (ISD) to understand and use two protocols that first work to honor the knowledge and day-to-day lived experiences that teachers bring with them to their PLCs, and then ask teachers to critically reflect on classroom experiences and student work to increase professional knowledge and enhance student learning (Vescio, Ross, & Adams, 2008). The protocols I’ve asked coaches to use with PLCs were created to mirror the protocols already in use in the district. The goal of creating protocols for the PLCs was to create a seamless integration of the NSI Planning Forward and Looking Back protocols into the already-existing PLC structures for 8th grade teams. The NSI teams also wanted the protocols to be instructive—we want school teams to learn and internalize the work of planning student-facing task sheets for cognitively demanding tasks and texts so that teachers become adept at creating and adapting task sheets for different tasks and different students based on what they learn from studying the student work.

These protocols are also meant to facilitate the integration of small tests of change into PLC work as part of our partnership with Dallas ISD on improvement science. The 8th grade English language arts/reading coaches from our seven partner middle schools have been tasked with facilitating two PLCs per week as part of our NSI partnership—one PLC that asks the 8th grade team to plan forward and create a student-facing task sheet around a high-level comprehension task (the first test of change that teachers are working on; to read more about professional development on high-level tasks, please check out “Empowering teachers to analyze the demand of instructional tasks” in the February 2019 issue of Bridges to Learning), and one that asks PLCs to look back and analyze student work to understand what students learned and could do in response to the task to inform the planning of instructional next steps.

Part of helping coaches learn from the protocols was the creation of a facilitator’s guide for each PLC. Coaching coaches at distance provides its own challenges, so I created the facilitator’s guides to provide insight into how each step of the Planning Forward and Looking Back PLC protocols might unfold during the PLC—I wanted to provide rationales to the coaches leading the PLC so that they could answer questions and support their teachers. The educative features in each of the facilitator’s guides explain why each step in the protocol is necessary to build teacher capacity to design high-level tasks and sequence student-centered routines that provide students pathways to sharing their thinking about challenging (and gristy) texts, so that students are asked to do the heavy cognitive lifting in class. These facilitator’s guides have also become my own test of change; in much the same way teachers in the NSI middle schools are trying out and adapting the student-facing tasks sheets based on teachers’ classroom observations and student work, I am trying out and adapting the facilitator’s guides and Planning Forward and Looking Back protocols based on the needs of the coaches and the PLCs. During monthly meetings with the coaches, we debrief the use of the PLC documents, discuss successes and challenges, and share next steps. This process allows coaches to network across schools and learn from each other; it also provides me with information on how to revise and refine the work coaches are being asked to lead.

Bibliography

Using PLCs to Build Teacher Capacity to Implement High-Leverage Practices

Laurie Speranzo
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Propel Pitcairn, one of the Institute for Learning’s newest partners, went through the process of an organization-wide curriculum adoption for both math and English language arts last year. As a result, the teachers will now be regularly using high-level tasks, which dovetails with the network’s vision that students will do the thinking. Propel Pitcairn is just starting their work with the IFL this year as a means of offering ongoing and systemic support for teachers in the implementation of tasks that are cognitively demanding. This work includes monthly content-specific PLC meetings, ongoing school-wide professional development sessions around equitable instruction, and classroom-based data collection.

Propel Pitcairn is part of Propel Schools, a Pittsburgh-based network of charter schools, whose mission is “catalyzing the transformation of public education so that all children have access to high performing public schools.” After attending the IFL Summit last June, Lindsey Smith, the assistant director of curriculum and instruction at Propel Schools, worked with the senior director of curriculum and instruction, Pat Coyle, to revise the network’s vision for mathematics. Inspired by the equity messaged in the work of David E. Kirkland and Rochelle Gutiérrez, the vision now reads:

- Scholars do the thinking.
- Scholars see that mathematics has the power to help us understand and potentially change the world.
- Scholars are learning more than mathematics.

Ariane Watson, the principal, and Veronica Struvee, an assistant principal, who have been working for several years to establish a clear vision of teaching and learning at Pitcairn, fully believe in the new vision for mathematics instruction. They share their hopes for the upcoming work: “The purpose of bringing the IFL in to support our work is to hone in on specific high-leverage practices in order to have a clear focus for instruction for the year. With our push to deliver high-quality instruction in conjunction with high-quality resources, our focus is laser-like to support teacher development through specific, purposeful professional development.”

One way in which the partnership with the IFL will support teachers and administrators is via the implementation of professional learning community (PLC) modules through which math teachers will examine and then implement the high-level practices of Accountable Talk® discussions and provide opportunities for writing about mathematical reasoning. By engaging in the PLC modules, the administrators say, “Our hope is to build teacher capacity and confidence with high-leverage practices in order to support scholar-to-scholar collaboration and to develop conceptual understanding of content.”

The PLC work consists of unpacking the high-leverage practice and then using the premise of improvement science to identify something small to change back in the classroom as a “test,” collect evidence of the impact of that test, and then determine if the small test of change worked as intended or if it needs to be tweaked and tried again. The goal is to refine the use of the high-leverage practice after implementing and reflecting on its implementation over time and across various conditions, including the content studied, so that it becomes a regularly used practice (see the cycle inherent in the Design Structures and Routines of a PLC diagram). By working together as a group of professional learners, the PLC will share and generalize practice towards the goal of high-quality education for every student.

To gauge the impact of the work of the PLC in helping teachers implement high-leverage practices when using cognitively demanding tasks, Propel Pitcairn continues on page 7.
Refine Instructional Practices Through PLC Discussions That Relate Content, Student Thinking, and Pedagogy

Kristin Klingensmith
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Almost every school out there has tried to implement some sort of professional learning community, or PLC. Many of those schools started PLCs with the right intentions and provided time for PLCs to meet regularly to work collaboratively with the goal of increasing academic performance of students. And though implemented with worthwhile intentions, in many cases the exchange of ideas and the collaborative work did not lead to increases in student learning.

For a PLC’s collective efforts to result in enhanced student learning, the work of the PLC must attain these five characteristics (adapted from Vescio, Ross, & Adams, 2008):

- Shared values and norms about the group’s collective work
- Clear and consistent focus on student learning
- Reflective dialogue that is ongoing and relates content, instruction, and student learning
- Deprivatized practice through sharing personal classroom cases
- Collaborative solving of problems of practice

Though all of these characteristics are important for the PLC’s work, when it comes to growing and refining teacher practice in a way that results in enhanced learning for students, it is essential that the PLC engages in discussions that are reflective and ongoing and that relate content, student thinking, and instruction. Discussions that draw on the relationship among content, the ways students think about the content, and the pedagogy used to support student understanding of the content are focused on the instructional triangle (Ball, 1999). Using the instructional triangle to guide discussions and plan lessons reduces the “chanciness” of learning occurring because teachers are intentionally making connections among content, student thinking, and pedagogy.

The following transcript segment comes from a PLC of early childhood educators. The PLC has been working on using questions to elicit student thinking, one of the NCTM effective teaching practices, to increase the amount of student talk during mathematics explorations; this is their pedagogical goal.

The activity they are discussing involves transferring water between containers of different dimensions (from container A to B) so students can reason about the water maintaining its volume, even when it looks different, because no water was added and no water was lost. The teachers have already discussed the mathematical goal for the activity and are now discussing the inquiry they will pose to students.

**T1:** We will show the students the two A cups with water. Maybe we should ask them, “What do you notice about these two cups?”

**T4:** Haha, my students are going to say they both have water.

**T3:** They’re clear. They are the same.

**T2:** I think mine will say they are the same too. I’ll ask them to tell me how they are the same.

**T4:** What if we asked, “Which cup has more water?”

**T3:** I’m not sure I want to ask that because it sounds like one cup has more water than the other, and it doesn’t.

**T2:** Maybe we should ask, “What do you notice about the amounts of water in the two containers?” instead of, “What do you notice about the two cups?” or “Which cup has more water?”

**T4:** Okay, that does sound different. It is not as leading as asking which of the cups has more water.

**T1:** I agree “What do you notice about the amounts of water in the two containers” draws their attention to the amount of water in each cup without leading them to more or less. They can respond a lot of different ways which means we can learn about their thinking.

**T2:** What do you think they will say and do?

**T4:** They are probably going to push them together to see if the water is the same height.

**T3:** I think they’ll use their hand to show the water is the same height.

**T2:** Mine will say they are the same and maybe try explain why and how they are the same.

**T3:** So now we pour the water from A to B. We want them to think about the amount of water in each cup.

**T4:** Oh, yeah, so now that they have said the amounts of water are the same, maybe we can say, “Tell me about the amounts of water in the two containers now.”

**T4:** A lot of my students are going to say that there is more water in A than in B because the water in A is taller than the water in B. What do you think your students will say and do?

In this short section of transcript, we see four teachers working collaboratively to refine the inquiry they will use throughout the activity to elicit student thinking. In refining their practice, they considered the mathematical idea students were to explore, the conditions of the exploration, and
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practice and student achievement. However, what does it mean for a PLC to be well developed? During the last 20 years, the IFL has explored ways of working in PLCs. Through these experiences and research findings, we developed and refined a set of practices that work well in a diverse range of settings. Here are our practical suggestions for setting up PLCs to implement and sustain the practice of improvement.

**Characteristics of a Well-Developed PLC**

**Collaboration**

When teachers come together as a PLC, they benefit from doing more than acting as passive receivers of information and from spending their time sharing knowledge and working together to solve shared problems. The PLC has clear expectations for what it will achieve specific to improving teaching and learning in their classrooms. Teachers set agendas ahead of time, and they come to PLC meetings having prepared any necessary pre-work so that when the PLC meets, time can be devoted to sharing in pairs, small groups, and whole groups to allow for progress towards defined goals as opposed to spending time with administrative or clerical tasks during the meeting.

Time for collaboration is precious; it allows every voice in the room to have a place in the discussion and can provide participants with differing perspectives on why a problem of practice exists and how it might be solved. Collaboration in PLCs provides a space to network knowledge and sets the expectation that participants share what they have learned; it provides a protected, safe space for exploring perspectives on problems and testing those perspectives, or possible solutions, against relevant research and a field’s best practices.

**Focus on Student Learning**

At the heart of a well-developed PLC is a focus on student learning that goes beyond anecdotal evidence or a study of quantitative test data, although both might initiate the identification of problems of practice and contribute to their understanding. When PLCs focus on artifacts of student learning—that is, on student work samples and artifacts of teaching or transcripts or audio recordings of student talk—instructional shifts will be evidence-based and grounded in what students and teachers do together in specific contexts. Studying student artifacts also necessitates the use of agreed-upon protocols to focus the study on the problem at hand and to avoid only looking at student work from a deficit perspective (describing what students cannot do). The hard work of solving problems of practice is twofold.

First, use real artifacts of student learning to describe what they bring to the table. Second, collaborate on instructional plans that bridge practice from where students are in their learning and to where students need to be in order to meet learning goals, the expectations of standards, and their understandings of their learnings. By looking at the relationship of content standards and their expectations, students’ current understanding of the content, and the pedagogy that can be used to advance student learning toward the standard, the PLC is not simply focused on what a teacher does in the classroom, but rather the impact of what a teacher does on student learning. A focus on improving the intellectual quality of student learning done through problem solving in PLCs increases learning and achievement because it allows teachers to experience themselves the benefits of collaborative student-centered learning in which they are the learners.

**Teacher Authority**

Teachers who participate in a PLC benefit from having ownership of the work and from experiencing firsthand the importance of collaborative student-centered learning. A well-developed PLC should not function using solely a top-down approach. Teachers should be empowered to interact, raise questions, bring relevant research to the discussions, challenge ideas, and make decisions about how they study and what they are studying. PLC members benefit from being collaborators in setting the agenda, bringing problems to the table, finding and sharing research to understand the problem, and bringing student work to be studied. Administrators and coaches who participate in PLCs with teachers are best positioned as colleagues in the learning. The participants benefit when decisions come from collaboration rather than from an overruling voice of authority, even when authority figures function as facilitators of the PLC work. Allowing all members to participate collegially, the PLC provides space for change and growth of instructional practice without being controlled by one person’s well-intentioned directives. It also allows teachers to take ownership of the work, a critical component for motivation to continue meeting to solve problems of practice as learners, as students, so to speak, of the problem at hand.

**Continuous Improvement Process**

As students change, as curriculum changes, and as standards change, opportunities to learn are always available. We also know that problems of practice require continuous attention. PLCs can provide a space for teachers and administrators to study together collaboratively, use evidence to chart progress, and propose and study new problems of practice as they arise (but also to know when to go back to previous problems if a change is not evident in students’ work).

**Continuous Improvement and Well-Developed PLCs**

When PLCs approach solving problems of practice through the use of continuous improvement (CI) processes (see graphic below), they first collaborate to identify problems and their possible root causes using a wide range of data collected from within the system. They can, for example, study district data to shed light on why particular groups of students are graduating at lower rates than their peers or why particular groups of students are showing signs of not being on track in 9th grade for graduation. Alternatively, they could study student performance and patterns of student performance related to writing or engaging in mathematical problem solving to identify what students...
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can do and are not yet able to do.

PLCs study multiple sources of relevant data to fret out problems. Once the PLC identifies the problems, the next step focuses the PLC on understanding the root causes of those problems. The causes might be directly discernible in the data, but it could just as well take additional digging to get to the causes. With problems in writing and mathematics, for example, the PLC might want to conduct empathy interviews with students and teachers to better understand how those impacted by the problem perceive it. Such interviews can be enormously valuable if they proceed from well-thought-out and focused questions that get the students and the teachers to talk about their experiences with the subject matter and their successes and failures. The PLC can ask students and teachers what they might change in instruction or what they think they need to be successful. The compilation of this kind of data can give PLC members substantial insights into root causes after they study the interviews through lenses that reveal major themes, trends, and contradictions. PLC members can also study the kinds of tasks regularly presented to students and the teaching approaches that they and their colleagues use, and they can draw conclusions about both of these that would point to the intellectual rigor of the work given to students and measure students’ engagement.

Once a PLC focused on instruction understands problems and root causes, teachers have the authority to dig into the literature and research to develop a theory of change. From this theory of change, they develop possible interventions or tests of change. They can propose changes or approaches to instruction based on their theory of change, and from this theory, they can propose what improvement science refers to as change packages that they and their colleagues test out in classes. An instructional theory of change might be, for example, that equitable, rigorous writing instruction will lead to student writing achievement. A change package, to continue with this example, might focus on instruction that engages students in a repertoire of writing genres on a regular weekly schedule. The instruction also could be embedded in student-centered approaches to writing instruction that foreground opportunities for students to work in groups of 2 or 3 to support each other’s drafting and revision through feedback and editing.

For such work, change packages are often recommended or designed. Change packages are intentionally created as a set of small tests of change that are interrelated and sequenced. These resources include specific sets or arcs of lessons designed to address specific problems. Teachers may vary the implementation of a change package or work specifically on one aspect of the change package, with the goal of eventually implementing the whole change package. In association with a change package are simple, practical measures by which the PLC members can know whether or how those lessons were successful when engaging students. Such measures can be quick surveys of students right after the lesson, lenses for analyzing students’ work, or feedback from teachers observing students’ engagement in the lesson. The emphasis on practical measures is on their ability to provide disciplined feedback quickly that can be displayed in simple charts or summaries so that the PLC members and other teachers can see the results of their tests of changes and make decisions about their next steps. These measures necessitate understanding change through an evidence-based focus on student learning. Decisions on PLC’s next steps during an improvement cycle are grounded in the real and evidenced experiences of teachers and students enacting the change.

PLCs who are working with an instructional focus using continuous improvement methods might just as well be called mini-research groups since they take up understanding problems, their causes, and testing solutions using the disciplined methods of improvement science. In fact, the literature on improvement science often compares the work of these PLCs to action researchers who use their classrooms and those of colleagues as spaces in which they continuously test changes; study their results with simple, practical measures; and make adjustments until they are satisfied that they have change packages that can be pushed out with confidence to others.

Bibliography

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School will work with the IFL this year to collect and code data. By looking at transcripts from classrooms and at student work, a lot can be learned about what extent practices are being implemented. It is the hope that this year the teachers in the PLC will see both an increase in the depth of the discussions in their math classrooms, as well as an increased amount of writing in math in which the students clearly express their reasoning around and understanding of the mathematics.

When asked about their role related to the PLC work, Watson and Strueve shared, “[We] will be facilitating the PLCs with support from Kristin Klingensmith, mathematics fellow, of the IFL. We are so excited to be partnering with the IFL to support all learners in our school community.”

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Using the Improvement Journey to Bring Equity to Every Student

Save the date for the 2020 IFL Leaders’ Retreat. June 2–4, in Pittsburgh. This year marks the 25th anniversary of the Institute for Learning’s commitment to ensuring equity for every student. This retreat will provide space for leaders to reflect and learn together about how to support and build capacity within schools to increase learning, improve student outcomes, and break down the barriers to equity and access due to historical systems of inequity. Our conversations during this week will serve as a catalyst for change and school improvement.

We invite you to join us to interact with some of the leading voices in improvement science principles and equity practices, to share instructional leadership strategies, to connect with other education leaders, and to celebrate the exciting endeavors taking place in schools and districts around the country to better serve every student. As a hub for a network school improvement community, the IFL is uniquely situated to provide deep discussions on effective instructional routines with measurement systems that result in improvements at scale.

Invited facilitators
Rochelle Gutiérrez | Jennifer Iriti | David Kirkand
Ramón Martínez | Jennifer Russell | Jennifer Sherer

Visit IFL.PITT.EDU for more information.

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various ways students might respond.

PLCs that engage regularly in discussions similar to this one are more likely to enhance student learning because among other things, they engage in
  • naming a mathematical content goal or a pedagogical goal linked to content,
  • discussing the underlying meaning of the mathematics, and
  • accounting for the specific ways students will solve tasks or demonstrate an understanding of mathematical ideas.

Whether you find yourself engaging as a member of a PLC or supporting the work of PLCs in your building, remember the value of using the instructional triangle as a guide and framework for collaborative discussions. PLCs may have many aims: increasing student performance, deepening student understanding, increasing the use of high-leverage practices. When considering any of these aims, a PLC will benefit from ensuring that in all discussions, tethering deep content knowledge to student thinking around that content to teacher practice that supports student understanding of the content is critical and effective.

Bibliography

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of the PLC engage in cycles of learning related to the high-leverage practices, they share examples from their practice. These serve to illustrate ways in which teachers are making connections between the practices and their day-to-day classroom work.

This routine has the potential to provide PLC members insights into teaching and learning in their own classroom environments. Following the study of a PLC module, teachers will identify something small that they might try out in their classrooms and artifacts that they will collect to determine the impact that their work is having in the classroom. The PLC modules provide the teachers with methods for analyzing the artifacts that they bring back to the next PLC. Based on the findings, teachers decide what to try next in their classrooms. It is via this process that teachers can determine what is truly having an impact in their classroom and why. The coding tools and process provide an objective lens through which to view their work. This allows the PLC members to collectively step back and view the result of their efforts through quantitative data. As the PLC continues to quantify their work from one PLC to another, patterns of change will emerge, allowing the PLC to make more informed decisions about their practice.

PLC members repeat the cycle. They identify another small change idea, try it out in their classroom, collect, and then analyze artifacts to determine the impact on teaching and learning. This occurs for several weeks. The excitement of making small changes in the classroom and determining the impact on student learning has created synergy among teachers and keeps the discussions focused on content, pedagogy, and student learning.

We look forward in future newsletters reporting the PLC work that three IFL districts will be engaging in this school year; Schenectady City School District, New Brunswick Public Schools, and Propel Schools Pittsburgh will be using the IFL PLCs this year.

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