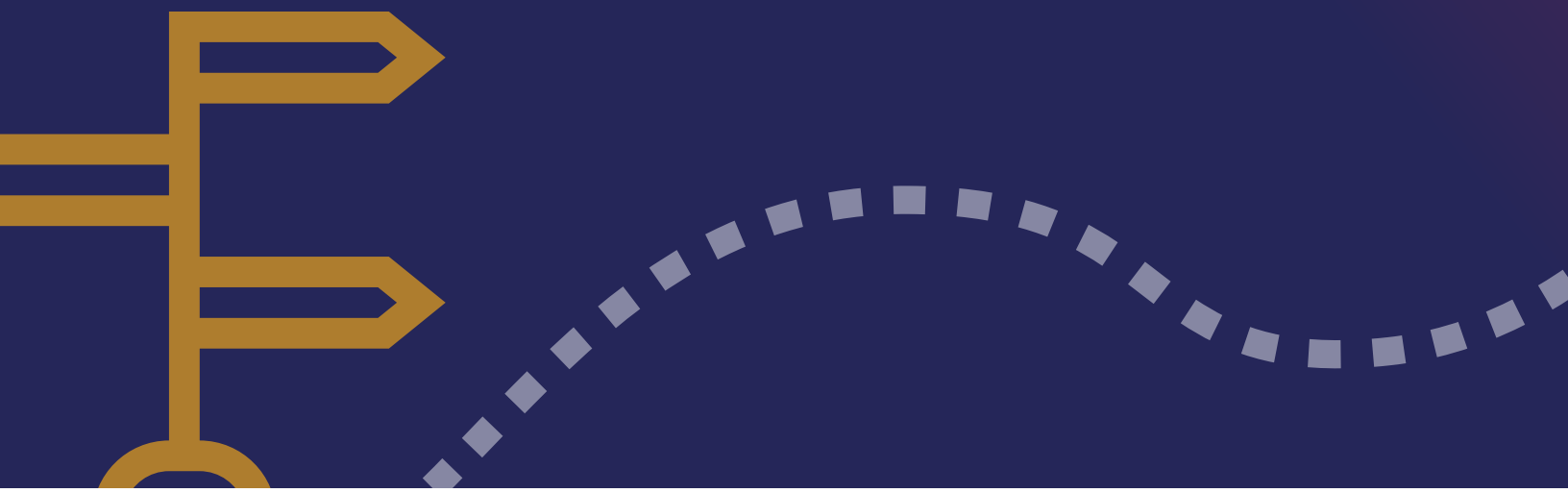
Paper Trail:

What District Procurement Reveals About Professional Learning



Fall 2026

THE CENTER FOR EDUCATION MARKET DYNAMICS

rppl Research Partnership for Professional Learning

Executive Summary

Professional learning, and, in particular, curriculum-based professional learning, have proven to be an influential factor in effective instruction. But while the importance has been demonstrated, much remains unknown about district practice. Several organizations have begun the work of bringing these practices to light: a notable example is RPPL's 2025 analysis of district professional learning spending, *The Cost of Improvement: How Districts Spend on Teacher Professional Learning* (Boguslav et al., 2025).

Continuing that mission, this analysis of contracted professional learning (PL) services from across 2,459 districts nationwide reveals how districts are procuring professional learning services and provides insight into current practice as well as which elements of curriculum-based professional learning (CBPL) these agreements incorporate. Key findings include:

1. Districts manage a complex set of providers and services. The median number of professional learning providers per district is four, while 450 districts were identified as managing eleven or more unique PL vendors.

2. The dominant structure in PL contracts is workshops; workshops are included in 67% of contracts, and 34% of all contracts are for one-off sessions.

3. Teachers are named as a primary audience in 69% of all contracts; with only 48% indicating the primary audience includes school leaders and 6% including instructional coaches.

4. Curriculum-linked PL makes up only 39% of all contracts but 64% of all spend. These larger investments also tend to be more focused and more often built around a single professional learning structure rather than multiple.

5. Many elements of CBPL are not present in these artifacts, including the identification of specific student populations, use of data, and conditional payment structures. This does not mean that services and agreements do not include these in practice, but that it is not yet common practice to include them in contracted language.

Taken together, these findings paint a picture of a PL procurement landscape led by teacher-facing workshops but largely missing some key indicators of curriculum-based professional learning. The expanse of the landscape is also highlighted—districts typically do not contract with a single provider across content or grade levels. There is opportunity here: an opportunity for high-quality professional learning providers to bring best practices to the market and opportunity for districts and PL providers to work together to ensure that every dollar transferred is a step towards improved adult practice and student outcomes.

Acknowledgements

About CEMD

The Center for Education Market Dynamics (CEMD) is a central hub for data and information about K–12 teaching and learning. Anchored by the field's most comprehensive, standardized dataset on K–12 curriculum adoption, CEMD conducts research and analysis across the broader instructional landscape. By sharing these insights for the public good and providing tools and services that support strategic decision-making, CEMD works to strengthen curriculum and instruction and improve outcomes for all students.

About RPPL

The Research Partnership for Professional Learning (RPPL) is a collaborative of professional learning organizations, researchers, advocacy and policy organizations, and foundations committed to advancing the collective understanding of how to support teacher professional learning that leads to equitable student outcomes for historically marginalized students. RPPL seeks to identify the features of professional learning that dramatically accelerate improvements in students' classroom experiences, well-being, and academic growth; and to generate and share insights that can guide the professional learning field, including professional learning organizations, districts, and schools, to strengthen their program design, results, and efficiency.

Authors

CEMD Team

Emma Goldberg

Adam Erler

Lauren Weisskirk

Shari Meffert

Lora Kaiser

RPPL Team

Arielle Boguslav

Nate Schwartz

Stacey Alicea

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Introduction

Teacher professional learning has long been considered a powerful opportunity for improving teacher practice and, consequently, improving students' educational experiences and outcomes. Much research has gone into determining the aspects of high-quality, effective teacher professional learning (Darling-Hammond et al., 2017; Gallagher, 2017; Hill & Papay, 2022; Learning Forward, 2022), and one theme has consistently emerged: professional learning is most influential when paired with curricular materials, particularly high-quality instructional materials. This pairing, dubbed curriculum-based professional learning (CBPL), has since become an intentional focus of the educational community. Several landmark works (Alicea et al., 2025; Chu, 2022; Short & Hirsch, 2020) explored CBPL in more depth—defining its components, examining its growth as a distinct field, and determining a common language across the burgeoning field. While some research has begun to examine the role CBPL plays in districts, schools, and classrooms (Doan et al., 2022; Rivet Education, 2026), much knowledge remains anecdotal. Additionally, in order to evaluate how prevalent CBPL is across the landscape, a clear understanding of what PL looks like in districts must first be established. This question is an important step for building the foundation for future exploration, and has previously only been able to be answered through survey research.

CEMD and RPPL are attempting to change that. We asked the question: can we determine the landscape of procured professional learning at scale, and, if so, how do the practices match the characteristics of CBPL?

Answering this question required a novel approach. CEMD began by collecting artifacts related to professional learning from thousands of districts across the country. Then, working with the RPPL team behind *Defining Curriculum-Based Professional Learning*, we developed a coding schema for the documents we would receive, allowing us to analyze their contents in a structured way and at a large scale. In order to complete this analysis at the scale we anticipated, we deployed an open source LLM to extract our specified data schema from each document it ingested.

Pieces of the PL Puzzle

An important note: examining procurement in professional learning is inherently an incomplete picture. Districts commonly provide professional learning "in-house," offered by either district or school staff. These district- or school-provided professional learning experiences are not captured in procurement documents, and thus the findings shown here should not be generalized to all professional learning happening within school districts. Additionally, district spending on formally procured professional learning tends to be significantly less than the personnel spending allocated to "in-house" professional learning—about 30% compared to 70% (Boguslav et al., 2025). While this work aims to shed light on the formal procurement spending, the insights are not representative of the remaining 70% of district spend. And while the make up of this spending is transparent in select states, such as Rhode Island, it remains unknown in the vast majority of the country—a unique opportunity for future exploration.



District Context

The district where PL is procured, how leadership is engaged in that learning, and whether the PL is tied to the district's broader instructional priorities.



PL Content & Goals

The subject matter and instructional strategies covered, the specific student populations addressed, and the intended outcomes of the PL, including whether and how impact is measured and whether a train-the-trainer model is used. For curriculum-based PL, also captured are the implementation phases supported and guidance on fidelity and adaptation.



PL Audience

The subject areas and grade levels covered by the professional learning and the staff groups for whom it is designed.



PL Structure & Design

Whether the PL is aligned to a specific curriculum and, if so, which one, as well as the provider delivering it and the full structure of the program's scope of service—including the modality of delivery and whether the program incorporates workshops, classroom walkthroughs, coaching, and peer collaboration, with detail on the format, purpose, and tools associated with each component, alongside any active learning activities and data analysis practices embedded in the program.



PL Dosage & Cadence

When the professional learning takes place, whether it is a one-time event or recurring engagement, how frequently sessions occur, and the length of each session.



PL Cost

The total price paid or quoted for PL services, the price per individual unit, and whether payment is contingent on specific outcomes or milestones being met.

While the data framework was developed based upon the full definition constructed in *Defining Curriculum-Based Professional Learning*, every data element was not present in every document or artifact. Analyses included in this report reflect the portion of artifacts (primarily contracts and purchase orders) that captured the relevant data element(s). Analyses are then reported as a percentage of that subset of contracts.

Through public records requests for PL procurement documents from 2023-2026, we collected 77,120 relevant documents from 2,459 school districts, representing 173,634 unique artifacts.

We designed our sample to collect artifacts from a variety of district types; 6,691 districts received public records requests and 37% responded, with no notable differences based on size or locality. We intentionally prioritized districts with over 1,000 students and therefore the sample overrepresents large districts when compared to the national figures. Submitted artifacts included RFPs, vendor quotes, scope of work documents, contracts, purchase orders (POs), invoices, and assorted financial documents. While some artifacts formed a district engagement, with multiple documents (e.g. an RFP, contract, and invoice) describing the same professional learning purchase, most were standalone, each documenting a separate purchase. We drew on all of these artifacts to build a broad picture of the professional learning landscape; however, this report concentrates heavily on contracts and POs—which made up the largest share of the sample.

FIGURE 1

			Locality				Size			
	Total Districts	Represented States	City	Suburban	Town	Rural	Very Large (25,000+ students)	Large (5,000 - 25,000 students)	Medium (1,000 - 4,999 students)	Small (<1,000 students)
Sample	2,459	49	13% (312)	38% (932)	19% (462)	31% (753)	4% (104)	27% (672)	58% (1,421)	11% (262)
Nationally	13,619	50	19%	22%	12%	46%	2%	9%	30%	58%

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Glossary

- **Request for Proposals (RFPs) =** initial step in procurement for large products or services; purpose is to gather bids from multiple vendors aligned to district specifications
- **Vendor quotes =** provision of costs aligned to service items
- **Scope of work documents =** detailed description of work to be completed in a specific contract
- **Contracts/POs =** securing of services for a specific body of work, confirms expectations between vendor and district; may include previously agreed upon scope of work
- **Invoices =** purpose is to receive payment for services rendered under an existing contract
- **Financial documents =** a record of payments, accounts receivable, and historical vendor list
- **Document =** the file returned from a district records request; may include several artifacts
- **Artifact =** the individual RFP, quote, scope of work, contract/PO, invoice, or financial document included within the document received
- **District engagement =** the services relationship between district and vendor represented over multiple artifacts; i.e. the RFP, contract, and invoice from a singular PL occurrence

Findings

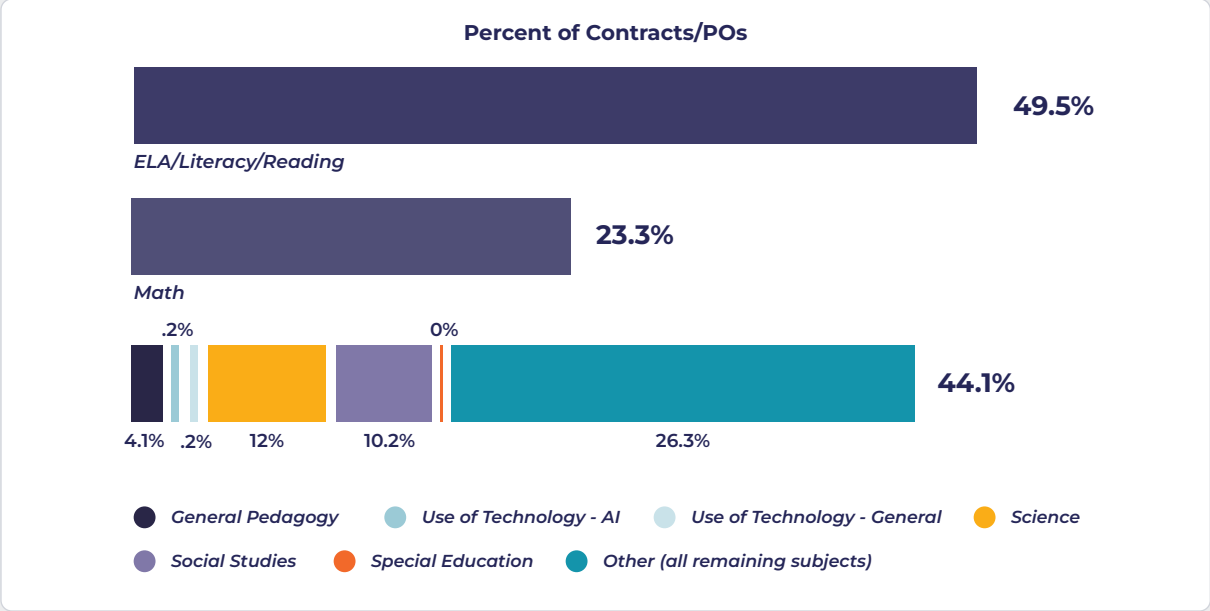
A Complex Market

Professional learning in K-12 is not just a large market, it's a complex market—which is reflected clearly in district procurement of professional learning services. Firstly, professional learning is not intended for a singular audience. District and school leaders, instructional coaches, teachers, student support professionals, and paraprofessionals all benefit from accessing professional learning that is tailored to their roles and responsibilities.

Additionally, professional learning is often divided into subject-specific opportunities to allow teachers, leaders, and coaches a deeper exploration of the content. Professional learning also extends outside the bounds of content, with professional learning surrounding general pedagogy, student engagement, and working with diverse student needs, for instance. This research found that ELA and math-specific PL were most commonly procured.[1]

FIGURE 2

Professional Learning Content and Subject Areas

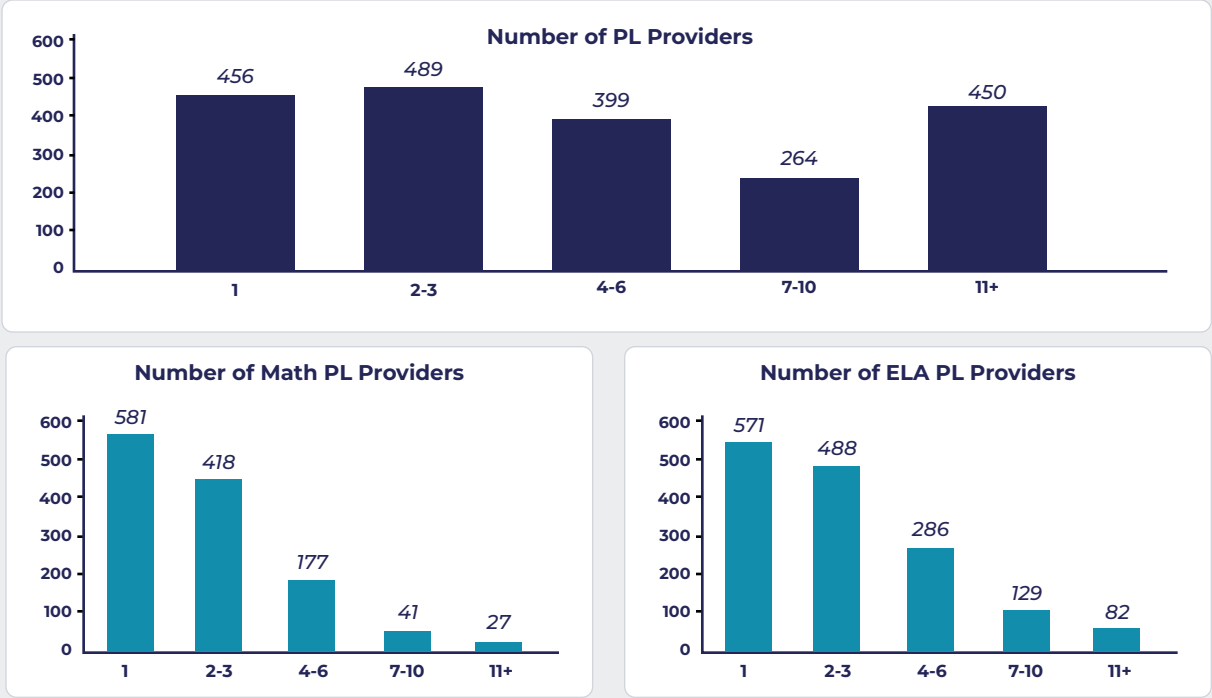


n=26,684[1]

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Finally, to compound the complexity, districts are less likely to contract with one or two professional learning providers; rather, according to this analysis, the median number of providers a district contracts with is four. Additionally, a significant portion of districts are contracting with far more providers, with 450 districts identified as contracting with 11 or more.[2]

FIGURE 3



Overall n=2,058, Math n=1,244, ELA n=1,556[2]

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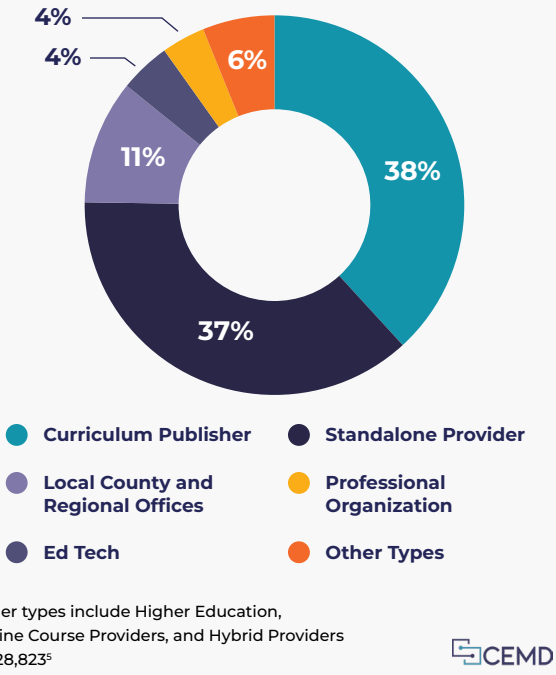
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These providers vary in type: research found artifacts from curriculum publishers, online course providers, local county and regional offices, professional organizations, higher education institutions, national professional learning providers, and individual providers.

Of all the provider types, curriculum providers represent the plurality of the contracts in the market: 38.2% of known-vendor contracts are curriculum publishers,[3] accounting for 49.6% of overall professional learning spend.[4]

FIGURE 4

PL Provider Type Breakdown



Other types include Higher Education, Online Course Providers, and Hybrid Providers
n=28,823[5]

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Market Analysis: Curriculum Publishers and Standalone Providers

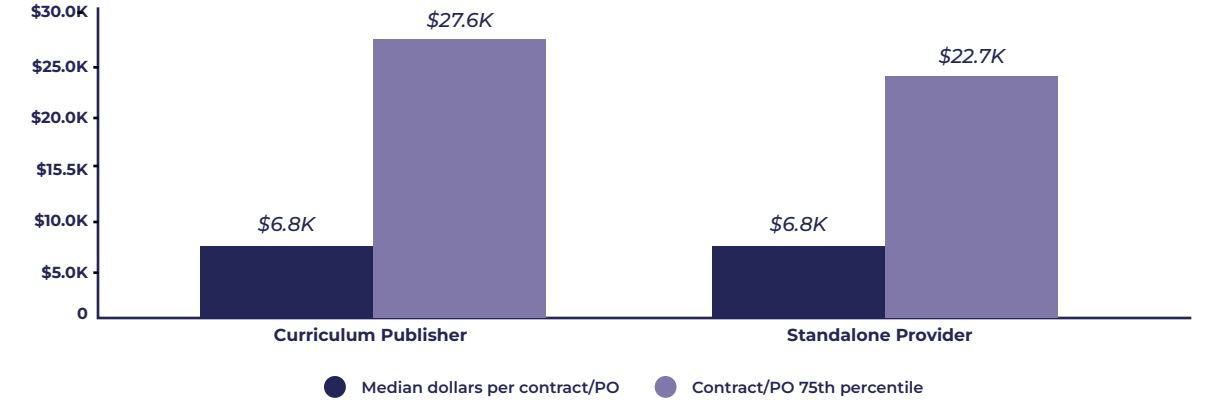
While each provider type varies slightly in their mission and methods, the overall landscape paints the picture of a market in two sectors: curriculum publishers (encompassing traditional curriculum publishers as well as open educational resource providers) and standalone providers (encompassing organizations providing PL without also offering a curriculum product).

Cost

The median cost of publisher-provided PL contracts is roughly equivalent to **standalone providers**, at $6.8K. As contracts get larger, price differences increase, with the most expensive quarter of contracts from **curriculum publishers** at 27.6K versus standalone providers 22.7K.[6] This difference can not be ascribed to curriculum costs themselves. The analysis removed curriculum-only purchases and budget line items for curriculum products within each contract. Contracts that combine PL and curriculum in the same line item accounts for less than 16% of total spend—accounting for those does not meaningfully change these figures.[7]

FIGURE 5

Contract Size by Provider Type



Curriculum Publisher n=9,866; Standalone Provider n=9,955 [6,7]

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Structure of Services

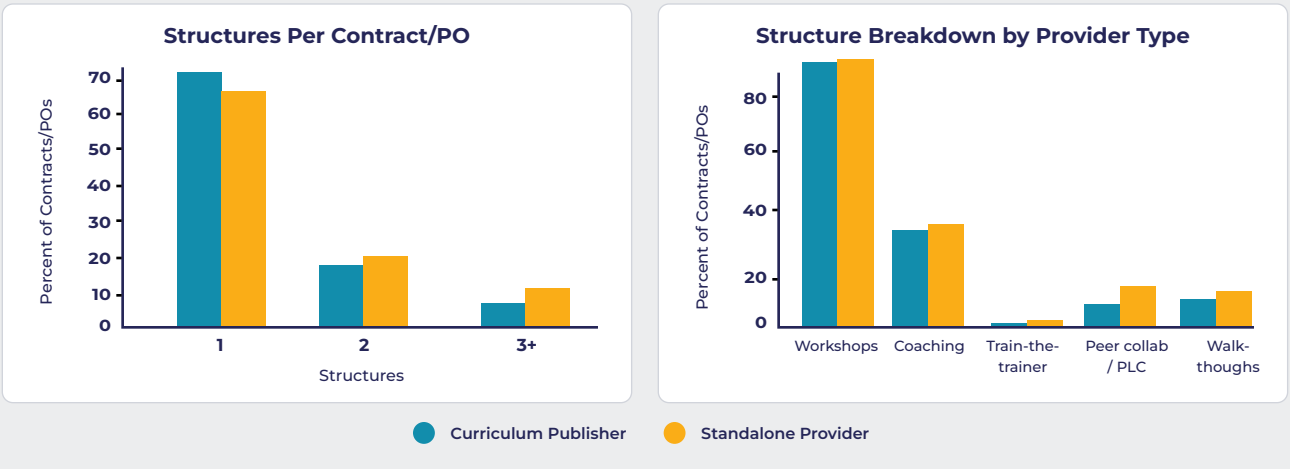
One of the most significant differences between PL contracts from curriculum publishers and standalone providers exists in the structure of services contracted.

Glossary: Types of PL structures

- **Workshops =** a time-bound, facilitator-led session on a specific topic or skill
- **Coaching =** individualized support, either one-on-one or in a group setting, to strengthen an educator's practice
- **Train-the-trainer =** PL that is structured to train PL facilitators to then deliver PL to educators
- **Peer collaboration / PLC =** structured, non-evaluative peer learning
- **Classroom Walkthroughs =** structured observations of classroom instructional practice to inform feedback

Curriculum publishers were more likely to offer a single structure per contract, while contracts from standalone providers with two, three, or more structures per contract were more common. Overall, the vast majority of contracts contained a singular PL structure.

FIGURE 6



Curriculum Publisher n=8,171; Standalone Provider n=9,180[8]

Of these structures, workshops—particularly one-off workshops—were the most commonly contracted service for both publishers and standalone providers. Workshops were included in 67% of all contracts, **while one-off workshops are present in 34% of all contracts**.[9] This corroborates what Rivet Education has found in their research with professional learning partners—workshops were the most requested PL structure in both 2024 and 2025 (Rivet Education, 2026).

Connection to Characteristics of CBPL

As identified in Defining Curriculum-Based Professional Learning: Building a Common Language

Across contracts, professional learning most often takes the form of one-off workshops. By definition:

- **CBPL is Collaborative** - Intentionally structured non-evaluative processes where teachers work together to engage in shared cross-teacher learning grounded in HQIM
- **CBPL is Intensive and Sustained** - Providing recurring support that includes practice, implementation, and reflection mechanisms to guide deep instructional shifts alongside flexible, shorter opportunities tailored to immediate and more contextual needs
- **CBPL is Staged Over Time** - Building and shifting across distinct implementation phases to take into account teachers' evolving needs as they use and deepen their familiarity with new materials

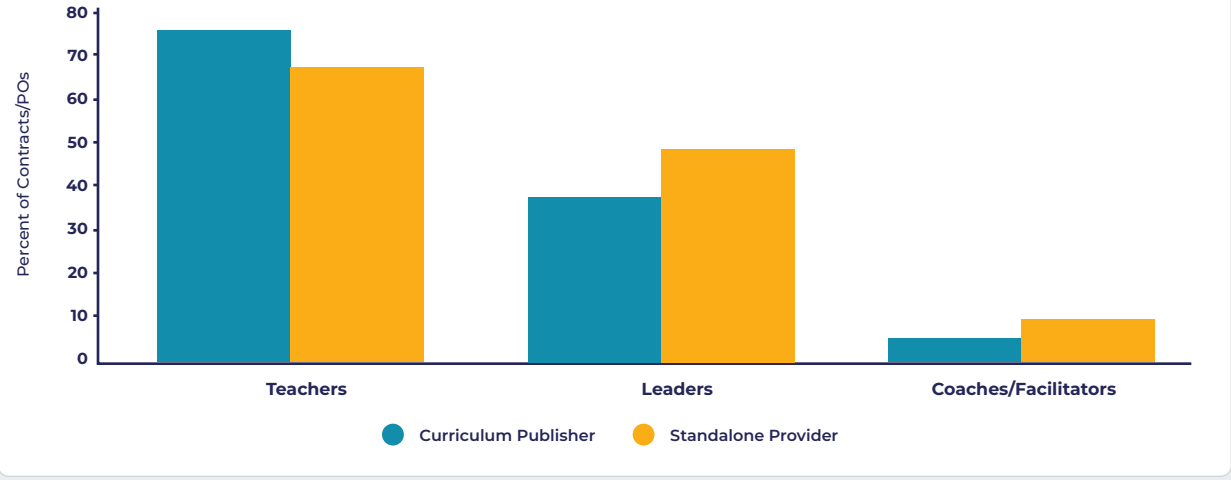
Audience

Across all contracts, **teachers are a named primary audience—69% of contracts are intended for teachers**.[10] Leader-facing PL accounts for 48% of contracts, and coaches/facilitators are the intended audience in only 6% of contracts.[11]

Differences between sectors of the professional learning market are also seen in the intended audience. Curriculum providers are more likely than standalone providers to conduct PL for teachers—teachers make up the audience in 76% of curriculum provider contracts. Conversely, standalone providers are more likely to provide PL to leaders, coaches or facilitators.[12] Coaches/facilitators were the least frequently named primary audience—raising questions about where these roles, often responsible for providing PL to teachers, receive their own PL.

FIGURE 7

PL Audience by Provider Type



Curriculum Publisher n=7,337; Standalone Provider n=7,417[12]

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Connection to Characteristics of CBPL

As identified in Defining Curriculum-Based Professional Learning: Building a Common Language

Contracts show evidence that teachers are the primary intended audience for the majority of professional learning. By definition:

- **CBPL is Supported by Instructional Coaches** - Personalized, job-embedded support, responsive to teachers' individual needs and instructional contexts, that provides teachers with ongoing guidance, modeling, and feedback on using HQIM and instructional approaches effectively

Content and Curriculum Linkage

Alignment to high-quality instructional materials (HQIM) is integral to curriculum-based professional learning. We looked at the artifacts to determine how often contracts include a specific link to adopted curriculum.

Analysis of curriculum linkage raises questions about procurement practice: although curriculum-linked professional development is widespread (86% of districts had at least one curriculum-aligned contract[13]), it is actually the minority of total professional learning contracts—only 39% of all contracts were curriculum-linked, with the remainder being for general pedagogy or content-agnostic material.[14] This aligns with what RAND has found: according to teacher surveys conducted in 2022, only 12% of teachers reported spending a "large extent" of professional learning time on use of materials (Zuo et. al., 2022).

Despite only 39% of contracts linking to curriculum, they make up the largest share of spending: 64% of contract dollars, totalling $2.16B, are spent on curriculum-aligned services. This analysis did not include curriculum-only contracts and removed any curriculum line items—contracts with combined PL and curriculum line items account for less than 13% of total spend.[15]



Connection to Characteristics of CBPL

As identified in Defining Curriculum-Based Professional Learning: Building a Common Language

Analysis finds curriculum-aligned PL represent a smaller portion of the total landscape than general pedagogy or content-agnostic PL. By definition:

- **CBPL is Grounded in Practice** - CBPL should be built around teachers' day-to-day work, offering systems, tools, and HQIM that draw on practice, can be incorporated into classrooms, and are communicated in ways that allow teachers to learn through direct application and receive feedback to refine their practice
- **CBPL Balances Fidelity and Adaptation** - A balanced approach to instructional decision-making where teachers adhere to the core components and instructional strategies of their curriculum with integrity while making necessary adaptations to meet the diverse needs of their students

What We Didn't See

Curriculum-based professional learning extends beyond what has been detailed thus far—several characteristics of CBPL were not able to be observed in this work.

One such characteristic is "CBPL Supports Teachers in Meeting Individual Student Needs". Only 2.7% of contracts were identified as focusing on specific student populations, such as Multilingual Learners or Students with Disabilities. While a focus on these populations could be addressed within larger curriculum-aligned professional learning, this methodology did not allow for a deeper exploration into its existence. This finding echoes what the Stanford Scale Initiative found in their scan of contracts, both those using an Outcomes Based Contracting (OBC) model and those without—only 35% of contracts in their sample included the definition of a target student population (Lu et. al., 2025).

Additionally, "CBPL is Supported by Measurement for Improvement and Impact" was not widely seen, **with indications of measuring for impact seen in only 2.8% of contracts**. The Center for Outcomes Based Contracting (OBC) has dedicated work (as studied in aforementioned Stanford work) to improving the use of outcomes and measurement-based payment structures, and while initial efforts show promise (Krausen, et. al., 2026), **the presence of conditions of payment was found in only 1.1% of contracts**.[16]

Finally, data elements indicating "CBPL is Driven by Effective Leadership" and "CBPL is Anchored in a Shared Instructional Vision" were found in 5.3% of contracts, meaning no generalizable insights were able to be gleaned from them. However, this percentage increased (to 15%) when analyzing RFPs, indicating that while these aspects of CBPL are not often included in procurement contracts, they may be more present in other parts of the procurement process or visible in practice. The sample of RFPs analyzed was too small for significant findings, but the 49 RFPs containing this information are a promising lead for future research.[17]

Connection to Characteristics of CBPL

As identified in Defining Curriculum-Based Professional Learning: Building a Common Language

While not all aspects of professional learning engagements are expected to be found in contracts or even more robust artifacts such as RFPs, there remains several gaps. By definition:

- **CBPL Supports Teachers in Meeting Individual Student Needs** - PL promotes high expectations for all learners, supports teachers in differentiating instruction and effectively using HQIM to meet the needs of all students intentionally, regardless of background, and creates classroom environments where all students can learn. PL is designed to be accessible to and inclusive of a broad range of teacher learning needs
- **CBPL is Supported by Measurement for Improvement and Impact** - CBPL programs should focus on using specific data (e.g., impacts on teacher learning, coaching success, student experience and academic outcomes) grounded in rigorous criteria and evidence-based measures to inform improvement and impact. These data should assess both immediate and long-term outcomes tied to professional growth, curriculum implementation, and teacher and student learning
- **CBPL is Driven by Effective Leadership** - The active engagement of leaders at both school and district levels in setting a clear PL strategy, creating a coherent approach aligned with school goals and practices, and providing ongoing support to teachers throughout the implementation process
- **CBPL is Anchored in a Shared Instructional Vision** - Alignment of PL with school and district curriculum, goals, policies, and practices to create a cohesive approach to high-quality instruction and outcomes for all students

Conclusion

Professional learning is a significant investment for school districts, with the average district spending over $8,000 per teacher annually on professional development and training. Prior research has determined that roughly 70% of that figure is likely spent on personnel costs associated with "in-house" PL (Boguslav et al., 2025)—but up until recently, little has been known about how the remaining 30% is spent. This research examines the PL procurement artifacts of 2,459 districts across the country to begin answering that question.

Along with insight into the current professional learning practices of school districts, the research also identifies significant opportunity—opportunity for districts, organizations supporting districts, and professional learning providers to examine their strategies, services, and related contract language within the wider landscape and through the lens of curriculum-based professional learning. Doing so will be paramount in the post-ESSER budget environment and as declining enrollment continues to shrink budgets across the country. The framework developed for this research can be used as a tool, both by districts and PL providers seeking to analyze their own documents, and by researchers looking to build on this work further.

In the spirit of this, we highlight questions that this work has raised for our team, and express our hope that our work will provide a useful foundation for those seeking to answer them in the future:

- How are professional learning decisions made by districts in context of instructional vision and strategic plans?
- How are decisions on contracting professional learning versus developing it locally made? How do these decisions align with the overall district strategy?
- What does the landscape of school- and district-provided PL look like? What structures are common, and what practices accompany them?
- How are all stakeholders in the system accessing PL that reinforces the knowledge and skills needed for specific roles related to curriculum and instruction?
- How do PL audiences—and in this analysis we frequently see teachers as the primary audience—experience the volume of contracted PL providers?
- How are districts measuring the impact and quality of PL contracts?

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Appendix A: Methodology

In order to capture the landscape of professional learning at scale, the team explored the feasibility of a novel methodology. We began by issuing public records requests to 6,691 districts across the country. Of those requests, 2,459 districts responded. Within those responses, we received a total of 77,120 documents, representing 173,634 distinct artifacts. Of those artifacts, 72,854 were pertinent to professional learning and were included in analysis (curriculum-only contracts were also excluded). Of these PL artifacts, 45,747 were contracts. Contracts were selected as the primary unit of analysis due to the large sample size, valuable data elements available, and potential duplication of data introduced by the use of all artifacts.

The approach to analysis began by a determination of the information we sought to extract from the artifacts. The CEMD and RPPL teams worked together to develop a coding schema based upon the common definition of CBPL established in *Defining Curriculum-Based Professional Learning*. The full data framework, visualized in Appendix B, was designed in order to accomplish three tasks: one, collect data that would make each artifact analyzable within its larger context (collection year, district, provider name, etc.); two, collect data identifying the shape, content, and purpose of the professional learning; and three, identify if features of CBPL were visible within the artifact.

Within the framework development and extraction process, we designated the product, rather than the artifact, the unit of observation. By capturing data at the product level, we allowed future flexibility with analysis, allowing us to analyze at the highly-granular product level or aggregate up depending on analytic need.

In order to analyze the large amount of artifacts received, our team used the open-source Qwen3.5:9B LLM. The LLM was prompted using the data framework developed by CEMD and RPPL, thereby reducing the margin for error in data extraction and ensuring that only the relevant data were extracted. Improving the output of the LLM was an iterative process; there were many rounds of running small batches of extractions, identifying errors in the extraction, and using those as "few-shot" prompts for the LLM. Although lengthy, this part of the process was imperative for ensuring valid and reliable results.

After the data was extracted into the prescribed schema, it had to be cleaned and normalized. Due to the vast number of sources and artifacts, provider names and type in particular posed a normalization challenge that involved establishing naming conventions, provider categories, and supplementing manual cleaning with validated, LLM assistance. Additionally, this phase of the process created quality flags for inconclusive data—ensuring such data was not included in the final analysis.

Finally, analysis was conducted on the extracted and normalized data. The unit of analysis changed based upon the analytic question—for instance, when exploring the number of providers districts typically work with, *districts* were the unit of analysis. However, when analyzing the prevalence of a PL structure such as workshops across the overall landscape, prevalence among contracts was calculated—contracts being the unit most representative of district-provider interaction. Importantly, because each contract may contain multiple products, each with distinct records within the collection, a contract may count towards more than one category—toward both "workshops" and "coaching", for example—and these categories are not mutually exclusive.

Data and Sample

The process of sending public records requests began by the selection of a sample. In this process, districts were selected in order to maximize likelihood of receiving a response. To do this, we stratified districts by size—using the NCES Common Core of Data as the source—and took a complete census of the "extra large" (defined as greater than or equal to 25,043 students) and "large" districts (defined as 4,975 to 25,043 students). We then took a simple random sample of districts of a "medium" size (1,000 to 4,974 students). Because the smallest districts (less than 1,000 students) represented the smallest number of students and were the least likely to respond based upon capacity limitations, we limited them within our requests. Therefore, our findings represent extra large, large and medium-sized districts and should not be extrapolated for the smallest districts. Note: These size groupings were derived by fitting a normal distribution to log-transformed district enrollment and defining categories by standard deviation (Small ≤ –1 SD, Medium –1 to 1 SD, Large 1–2 SD, Extra Large ≥ 2 SD), then adjusted slightly to fit project needs. Additionally, due to the availability of additional public records requests, Texas and California are slightly oversampled, so behavior within these states may have a stronger influence on the trends seen overall.

2,459 districts responded to our public records request, creating our analytic sample. Of those districts, 932 were from districts in suburban localities, 753 from rural localities, 462 from town, and 312 from city. The majority of districts (1,421) fell in the 1-5k enrollment range, followed by the 5-25k range (672 districts). A small number (262 districts) fell into the less than 1k range, and 104 districts fell into the 25k and larger range. We intentionally prioritized districts with over 1,000 students and therefore the sample overrepresents large districts when compared to the national figures. Beyond this, the sample mimics the national distribution, meaning that the likelihood of nonresponse bias impacting the representativeness of the sample is small, although still a limitation of the methodology.

Analysis

A Complex Market

- [1]To assess the subject breakdown of professional learning, the 26,684 contracts/POs with determinable subject/content area were analyzed. If a contract contained multiple line items, each with different subjects/content, the contract may be binned into multiple categories.
- [2]The median number of providers per district was calculated using the 2,058 districts (Math 1,244; ELA 1,556) with at least one contract with an identified provider; districts may have multiple contracts/POs representing both ELA and math.
- [3]28,823 contracts/POs with known vendors were used to determine breakdown between curriculum publishers and standalone providers. Any provider with a "hybrid" provider type was excluded from this type of comparison analysis throughout the research.
- [4]The same 28,823 contracts/POs were used to calculate spend breakdown—total spend was $1.7B, and curriculum publishers accounted for $0.85B.
- [5]The 28,823 known-vendor contracts were also used to determine provider type breakdown (Curriculum Provider 11,008; Standalone Provider 10,678; local county and regional offices 3,049; Ed Tech 1,250; Professional Organization 1,072)

- ***Cost***

  [6]To determine median cost and 75th percentile of curriculum publisher contracts (n=9,866) and standalone provider contracts (n=9,955), the 19,821 contracts known vendor were used.

- [7]To eliminate the possibility of curriculum costs being attributed to professional learning, any curriculum-only line items from contracts and POs were filtered out. Line items representing a combination of curriculum and PL account for 15.7% of spend.

Structure of Services

- [8]17,351 contracts/POs with at least one PL structure and known provider type were used to analyze the number of structures and structure type breakdown by provider type (Curriculum Publisher 8,171; Standalone Provider 9,180).

- [9]To determine the presence of workshops among PL structures, the 45,747 PL contracts/POs were analyzed; 30,503 were workshops and 15,347 were one-time workshops.

Audience

- [10]The 30,055 contracts/POs with a known audience were used to determine the proportion of teachers as the audience (n=20,704).

- [11]The same subset was used to determine the proportion of leaders (n=14,295) and coaches (n=1,810) as audience.

- [12]14,754 contracts/POs with a known audience and a provider type of curriculum publisher or standalone provider were used to analyze provider-type breakdown in audience (Curriculum publisher 7,337; Standalone provider 7,417).

Content and Curriculum Linkage

- [13]To determine the percentage of districts with curriculum-aligned contracts, the 2,106 districts with at least one curriculum-linkage-determinable contract were analyzed. Of those, 1,856 districts had at least one curriculum-aligned contract or PO.

- [14]45,747 PL contracts/POs were used to determine the percentage of curriculum-linkage (n=17,875) across contracts and POs; any contract/PO with a "not-determinable" linkage was considered not linked (n=27,872).

- [15]This same subset was used to determine the percent of total spend; to eliminate the possibility of curriculum costs being attributed to professional learning, any curriculum-only line items from contracts and POs were filtered out. Line items representing a combination of curriculum and PL account for 7.3% of spend.

What We Didn't See

- [16]To determine the level that various data elements of the framework appeared in contracts and POs, the full 45,747 PL contracts/POs were used, encompassing all knowable and unknowable figures.

- [17]To determine the presence of data elements indicating effective leadership and instructional vision components in RFPs, the 326 RFPs regarding PL were used

Validation

LLM technology was utilized in two ways in this project: a customized Qwen3.5:9B LLM was used to perform the data extraction, and Claude Opus 5 was used to impute provider type into a given set of categories based upon the extracted provider name.

There is inherent risk of bias and hallucination in all LLM work; our team mediated these risks in several ways. First, we utilized established best practice in prompt engineering, relying heavily on few-shot prompting through the creation of "golden sets" of data that were then fed to the model for prompting context. To improve labeling reliability, the model generated a certainty score for each assignment, and assignments below a predetermined confidence threshold were automatically excluded.

In order to validate the outputs, after sorting into a review output, every structured field was checked against external reference data where possible. District states and NCES IDs were checked and cleaned against data from the National Center for Education Statistics. Dollar values were bounded and parsed, and contract language was reviewed to improve parsing for analysis. Provider names were reviewed in several rounds of normalization: alias creation, canonical name assignment, and provider-type classification with junk detection.

Most importantly, each extraction for the training went through multiple rounds of iteration, where an initial output was evaluated for errors, the errors were identified and corrected by team members, and then "re-fed" to the LLM for prompting context.

Lastly, the stability of findings was tested across alternative definitions of the analytic universe. Field-level audits supplemented these: reading the model's own stated rationale for samples of assignments, hand-reviewing outlier cases and priority data, and checking for negation-phrased values that would otherwise be counted as positives. Where uncertainty remains, we report bounds of potential variation.

Appendix B: Full Framework and Glossary

Framework: Data Elements and Values

	Data element	Values
District Context	**District Name** Name of district or school where PL is procured	Text entry
	Leadership Engagement Available opportunities for school and district leadership to engage in PL *[select all that apply]*	Influencing the design of the PL Attending the PL Evaluating PL impacts Monitoring and supporting PL implementation
	District Alignment PL program is explicitly connected to the district's curriculum adoption, instructional goals, or school improvement priorities	Yes No Not stated
Document Metadata	**Contract Start Date** Name of district or school where PL is procured	Date
	Contract End Date Contract or PO listed start/end dates	Date
	Primary Data Source Type The type of document or mechanism from which PL data was obtained	RFP Vendor Quotes/Proposals Scope of Work Contract OR PO Invoice Financial Report
	Collection Year The year in which this PL data was collected by CEMD	Date
	Identifier Contract, Purchase Order, Invoice identifier	# Numeric ID
PL Audience	**Participating Departments** The subject area this PL program addresses *[select all that apply]*	ELA/Literacy/Reading Math Science Social Studies Other N/A
	Participating Grade levels The grade levels covered by the PL program	PK K 1 2 3 4 5 6 7 8 9 10 11 12 Multiple Other
	Attendees The staff groups for whom this PL program is designed *[select all that apply]*	General Education Teachers Coaches Interventionists School leaders / principals District Leaders Not stated

	Data element	Values
PL Content & Goals	**Subject Matter Content** The subject matter content on which the PL program is focused	General Pedagogy; ELA/Literacy/Reading; Math; Science; Social Studies; Other Content Areas; Non-Instructional; Use of Technology - General; Use of Technology - AI
	Instructional differentiation Whether instructional differentiation is a focus of the PL	Yes; No; Not stated
	Student Population Focus Specific student populations for whom the program explicitly builds teacher instructional capacity	Multi-lingual learners; SPED students; Other; Not stated
	Implementation Phase Focus The stage(s) of curriculum implementation that the program is designed to support	Initial implementation/curriculum launch; Ongoing implementation; Not stated
	Fidelity and Adaptation Guidance The goals for how teachers will implement the curriculum	Strict Fidelity; Maintaining Integrity; Adapting to local context
	Measuring Impact Whether and how data will be used to evaluate PL impact	No data or evaluation plan mentioned; Student assessment data; Classroom walkthrough or observation data; Student survey data; Teacher survey data
	Train the trainer Whether the PL incorporates a train-the-trainer model	Train-the-trainer PL; Direct to teacher PL; Other; Not stated
	Intended Outcomes Intended outcomes of delivered PL taken directly from the source document	Text entry

	Data element	Values
PL Cost	**Total Pricing** The pricing quoted or paid for professional learning services, all units of each "product" combined	# Numeric Value
	Conditions of Payment Whether payment for services is conditional on specific outcomes or milestones being met	Payment is conditional Payment is not conditional Not stated
	Pricing per unit The pricing quoted or paid for an individual unit of the professional learning "product"	# Numeric Value
PL Dosage & Cadence	**Date of Service** Dates or time period when PL was to take place	Date
	Cadence Whether PL is recurring or a singular event	One-time event Limited series of sessions Ongoing, regular cadence of sessions
	Frequency How frequently ongoing, regular PL sessions occur	Quarterly Monthly Every 3 weeks Every 2 weeks Every week More than once a week
	Dosage The length of each PL session	0-30 min 30-60 min 1-2 hours 2-5 hours 5-10 hours
PL Structure & Design	**Stated Curriculum** The name of the curriculum which is aligned to the PL as stated in the contract	Text entry
	Curriculum Alignment Whether this PL program is tied to a specific curriculum product.	Yes Partial No Not stated
	Linked Curriculum The specific curriculum product this PL program is associated with in the CEMD database	Text entry
	Provider Name The name of the organization or entity delivering the PL	Text entry
	Modality The primary modality through which PL is delivered	Onsite Online Not stated Blended (combination of onsite and online)

	Data element	Values
PL Structure & Design	**Workshops Included** Whether the scope of service includes professional development sessions or workshops	Yes, No
	Workshop Types The type and purpose of the workshops provided *[select all that apply]*	Introduction to new material, Advanced topics, Technical assistance, Not stated
	Classroom Walkthroughs Included Whether the scope of service includes structured observations or classroom walkthroughs	Yes, No
	Classroom Walkthough Observer Who conducts the classroom observation or walkthrough *[select all that apply]*	Classroom teacher, Full-time coach, School Administrator, District Administrator, Service Provider, Not stated
	Classroom Walkthrough Rubric What kind of rubric or tools will be used to guide the classroom observation or walkthrough	District rubric, Provider rubric, Other, Not stated
	Coaching Included	Yes, No
	Coaching Format Whether the coaching is provided for one teacher at a time or in small groups	1-1 coaching, Group coaching, Not stated
	Peer Collaboration Included	Yes, No
	Peer Collaboration Activities The type(s) of structured, non-evaluative peer learning included in the program *[select all that apply]*	Unboxing the curriculum, Lesson planning, Lesson Observation & Debrief, Book study, Not stated
	Active Learning Component Hands-on, practice-based learning activities included in the program	Yes, No, Not stated
	Use of Data Incorporation of activities that involve analyzing instructional data	Analyzing student assessment data, Analyzing exit tickets and other student work products, Analyzing teacher data, such as classroom observation scores
	PL Description The description of the PL services taken directly from the source document	Text entry

Glossary

- **Workshops =** a time-bound, facilitator-led session on a specific topic or skill
- **Coaching =** individualized support, either one-on-one or in a group setting, to strengthen an educator's practice
- **Train-the-trainer =** PL that is structured to train PL facilitators to then deliver PL to educators
- **Peer collaboration / PLC =** structured, non-evaluative peer learning
- **Classroom walkthroughs =** structured observations of classroom instructional practice to inform feedback

- **Interventionists =** small group tutors, SPED teachers, MLL teachers

- **Other content areas =** e.g. world languages, social emotional learning
- **Non-instructional =** e.g. school safety routines
- **Use of Technology - General =** e.g. any type of technology used to improve classroom instruction
- **Use of Technology - AI =** e.g. specific to AI and its application to instruction or use by students

- **Strict fidelity =** implementing as written
- **Integrity =** balancing fidelity and adaptation, adhering to core principles
- **Adaptation =** adapt for student needs, little guidance or guardrails

- **One-time event =** single session
- **Limited series of sessions =** set number of sessions
- **Ongoing, regular cadence =** specified frequency such as weekly, monthly, etc.

- **Introduction to new material =** entry level session focused on introducing new ideas
- **Advanced topics =** extending and deepening existing knowledge and skills
- **Technical assistance =** opportunities for Q&A and problem-solving support related to implementation of new learning

Glossary

Other Terminology

- **Request for Proposals (RFPs) =** initial step in procurement for large products or services; purpose is to gather bids from multiple vendors aligned to district specifications
- **Vendor quotes =** provision of costs aligned to service items
- Scope of work documents = detailed description of work to be completed in a specific contract
- **Contracts/POs =** secures services for a specific body of work, confirms expectations between vendor and district; may include previously agreed upon scope of work
- **Invoices =** purpose is to receive payment for services rendered under an existing contract
- **Financial documents =** a record of payments, accounts receivable, and historical vendor list

- **Document =** the file returned from a district records request; may include several artifacts
- **Artifact =** the individual RFP, quote, scope of work, contract/PO, invoice, or financial document included within the document received
- **District engagement =** the services relationship between district and vendor represented over multiple artifacts; i.e. the RFP, contract, and invoice from a singular PL occurrence

- **Standalone providers =** provider types, including local county and regional offices, Ed Tech, professional organizations, higher education, online course providers, and individual professional learning providers that do NOT also offer a curriculum product
- **Curriculum publishers =** providers, including traditional publishers and OER providers, that offer a curriculum product

Appendix C: Artifacts

Although contract analysis was the focus of this work, many different kinds of artifacts were collected, representing the entire procurement process: RFPs, quotes, scope of work documents, invoices, and district financial reports (such as ledgers). These artifacts varied in terms of sourcing party, typical timeline in the procurement process, purpose and function within the process, and level of information able to be gleaned from them.

Understanding what information can be extracted from each artifact type was a significant feasibility finding, and one that should inform future researchers exploring similar questions. For each artifact type, we quantified its typical level of detail as the average number of coding-schema data elements that were knowable within it.

Knowability is not the same thing as *presence:* a data element is knowable when the artifact contains enough information to determine its value, and that value may be affirmative or negative. A PL artifact might make clear that classroom walkthroughs are part of the program—or make equally clear that they are not; in both cases, the "classroom walkthroughs" element is knowable from that artifact. The element is unknowable only when the artifact leaves the question unresolved. Our counts therefore reflect how much each artifact type lets us determine, not what those determinations turned out to be.

Contracts and POs, the focus of this work, provided, on average, 13.8 of 48 data elements. Vendor quotes, scope of work documents, and invoices all provided similarly slim amounts of information, capturing 14.3, 14.3, and 11.3 elements respectively. RFPs extracted an average of 11.8 of 48 data elements, but typically provide information of data elements not extractable from other artifact types. Financial reports, where they were applicable, generally provided as little as 10.6 data elements—typically district name, provider name, and cost.

Invoices were the most widely collected artifact, with a total of 387,000 collected. Contracts and POs were the next most sizable group: 104,665 were collected overall. Vendor quotes (20,618 collected), financial reports (1,868 collected), and RFPs (485 collected) were the scarcest artifacts.

RFP	Vendor Quotes	Scope of Work	Contract/PO	Invoice	Financial Reports
Originator: District	*Originator:* Vendor	*Originator:* Vendor and District	*Originator:* Vendor and District	*Originator:* Vendor	*Originator:* District
Purpose: For large procurement processes only; to gather bids from multiple vendors aligned to district specifications; comply with contracting requirements	*Purpose:* Vendors provide costs aligned to service lines	*Purpose:* Detailed description of the work to be completed in a specific contract	*Purpose:* Secure services for a specific body of work; confirm expectations between vendor and district. May include previously agreed upon scope of work	*Purpose:* Received payment for services rendered under an existing contract	*Purpose:* Record of payments, accounts receivable, and historical vendor list
Level of detail: Medium	*Level of detail:* Medium	*Level of detail:* Medium	*Level of detail:* Medium	*Level of detail:* Medium	*Level of detail:* Low