DISCOVERY PARTNERS INSTITUTE
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Illinois Workforce and Education Research Collaborative
PART OF THE UNIVERSITY OF ILLINOIS SYSTEM

Key Findings from Initial Stakeholder Engagement on the Illinois Numeracy Plan:

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Executive Summary

In April 2025, the Illinois State Board of Education (ISBE) announced their intention[1] to create a statewide numeracy plan, modeled after a successful statewide literacy plan. They invited state stakeholders to engage in a needs assessment survey which would inform a Numeracy Summit. This Numeracy Summit was then held on June 3, 2025. The Summit engaged select stakeholders in presentations and discussions around the needs and potential components of a state numeracy plan. These launch activities would serve as the basis for the development of an initial numeracy plan, which would then be modified and refined through statewide listening tours during school year 2025-2026.

This report serves as a summary of events and findings during this initial launch phase, independently analyzed and compiled by the Illinois Workforce and Education Research Collaborative (IWERC) at University of Illinois. This report contains three components, overviewed here:

[1] Findings of the pre-summit needs assessment survey.

ISBE's survey gathered opinions from 2,395 teachers, 726 school and district leaders, and 40 external stakeholders on a multitude of issues related to numeracy and mathematics instruction. IWERC analyzed survey responses in aggregate for each broad stakeholder group and disaggregated findings by key characteristics to examine any divergence in sentiment from the overall takeaways. Overall, there was consonance among survey respondents in their responses.

Key takeaways from the survey were:

- **Professional Learning:** Teachers and administrators concurred that teachers had adequate, reasonably frequent, and financially supported professional learning for mathematics instruction. Teachers sought further support for curriculum implementation and differentiation of instruction, as well as pedagogical content knowledge. Teacher educators expressed concern about prospective teachers' preparation for mathematics coursework, including content and conceptual knowledge of mathematics, especially at the early/elementary grade levels.

- **Curriculum:** Teachers and administrators were largely satisfied with their current mathematics curriculum materials.

- **Instructions:** Teachers reported using "direct instruction" and "collaborative learning" as their predominant teaching styles in mathematics.

- **Assessment:** Strong majorities of teachers and administrators valued local and district assessment data for addressing student needs in mathematics, while only a minority valued state assessments for that purpose.

- **Student Attitudes about Math:** A plurality of teachers identified their students' perceptions of math as "Mixed," but more teacher respondents found students to be positive/very positive than negative/very negative in their perceptions. Teachers widely believed students' attitudes were driven by "student mindset, self-confidence, and perceived ability in math."

[1] See press release: https://www.isbe.net/Lists/News/NewsDisplay.aspx?ID=1540

- **Differentiation:** To address equitable access to mathematics instruction, administrators reported using differentiated instruction, analysis of state/local assessments to understand achievement gaps, and universal screening. While most respondents indicated they had resources or support for differentiation, a meaningful proportion (about 1 in 5) said they did not have such support.

- **Parental Involvement:** Teachers and administrators indicated minimal levels of parental involvement in mathematics education. They concurred that regular communication about student progress and online resources for parents could bridge this gap, compared to other strategies.

[2] Numeracy Summit description.

The Numeracy Summit included substantive presentations and panels, which are briefly described in this report for posterity. In addition, the Summit included an activity to generate participant feedback on the needs assessment survey, which served as the data for third component below.

Across these diverse proceedings, key takeaways were the need for the numeracy plan to address:

- **Vision:** Many presenters spoke to the need for a shared vision for the state around mathematics instruction, including a vision for what students learn and a vision for what mathematics instruction that promotes such learning entails. These presenters identified seminal resources (from the National Council of Teachers of Mathematics and the National Research Council, for instance) that can be used to build this vision.

- **Coordination:** Presenters believed that all the organizations in the educational ecosystem, from ISBE to ROEs/ISCs to institutes of higher education to school districts, must align towards the shared vision and work together. ISBE can provide tools, resources, and structures to promote the vision and collaboration, but ultimately all the players must align.

- **Capacity:** Presenters spoke to the need for high-quality professional learning at scale, noting the research-based elements of such learning (such as being sustained, active, and focused on student learning of mathematics). However, they questioned how to equitably provide access to such professional learning given differential resources at both the district (e.g., districts with multiple math coaches versus none) and personal (e.g., teachers with time and money to access graduate school, versus not) levels.

[3] Numeracy Summit participant feedback.

Participants were asked to respond to a series of discussion questions, which ISBE staff derived from the results of the needs assessment survey. IWERC analyzed and summarized themes in the notes from these discussions.

Key takeaways from the participant feedback activity were:

- **Vision.** Participants sought a shared statewide vision and language around the goals and principles of mathematics instruction.

- **Ideal mathematics teaching and learning.** Participants frequently shared ideas that hinted at their views of what that vision should be. They described classrooms that centered problem solving over rote memorization, concepts over procedures, and classroom discussion. They

sought assessments aligned to that vision, with fewer multiple-choice questions and more problem-solving.

- **Vertical planning.** Participants expressed that teachers and administrators lack understanding of the mathematical skills and concepts that come before and after a specific grade, and that more vertical planning across grade levels is needed.

- **Curriculum rollout.** Participants noted frustrations not with curriculum in and of itself, but with curriculum rollout and implementation in districts. They felt that professional learning and common vision were often lacking in these rollouts, as well as evaluation of teachers' fidelity of implementation of new curriculum.

- **Parent education.** Participants felt that parent knowledge of mathematics, especially new ways of teaching mathematics, could be a barrier to instructional change and student learning. They sought new ways of involving and educating parents regarding mathematics.

- **Teacher learning.** Participants spoke at length about the importance of educator preparation and ongoing training. They felt that teachers needed more training on pedagogical content knowledge (PCK) in mathematics throughout the trajectory of professional learning, from pre-service to in-service. They questioned whether appropriate structures were in place to support in-service professional learning; they wanted more time for such learning and more mentorship, coaching, regional support hubs, or "paired teacher" structures that promote observation of "best practice" and support for improvement of practice. Finally, they felt administrators need professional learning as well to be able to evaluate teachers' practices in mathematics and to identify high-quality supports.

- **Assessment use.** Participants wanted guidance and potential changes related to mathematics assessment in order to use data more meaningfully, noting challenges related to different assessment types (e.g., formative, summative, local/district/state) and utility of assessment administration (e.g., state assessments come too late for teachers to use).

The remainder of this report details these components further. These insights can be used to support ISBE's development of an initial numeracy plan draft, as well as to guide discussion topics during the statewide listening tour.

Findings of the Pre-Summit Needs Assessment Survey

Background

ISBE disseminated a needs assessment survey in April and May 2025 to gather statewide input for a potential numeracy plan. The survey focused on "mathematics instruction, professional learning, and curriculum." The survey was tailored to three audiences: (1) **teachers**, including classroom teachers, teacher leaders, and instructional coaches, (2) **administrators**, including principals and district leaders, and (3) **external stakeholders**, including staff at regional offices of education (ROEs), intermediate services centers (ISCs), and institutes of higher education. Each of these groups got some similar questions, but they also got specific questions based on their unique roles.

Teacher Respondents

2,395 respondents took the teacher survey. This included 2,004 self-identified teachers, 248 instructional coaches, and 143 teacher leaders. The survey had teacher responses from 101 counties (out of 102 in Illinois). Teachers provided background information about grade-level taught, years of teaching experience, and endorsement/licensure that allowed us to disaggregate responses based on these characteristics to identify points of consonance or dissonance in responses.

Out of a total of 30 survey items, the overall quality of the response data was strong. The mean item-level missing rate was 2.52%, and the median missing rate was 1.6%, indicating that most questions were answered by the majority of respondents. Nearly all items had missing rates below 10%. Three items (an open-ended question requiring a text answer and two questions requiring ranking responses) had higher missing rates. Aside from these items, all other questions had missing rates below 10%, suggesting a high level of overall engagement with the survey. Each question was analyzed with the total number (N) of those who responded to the question, which differed by question if there were non-responses.

Administrator Respondents

726 respondents took the administrator survey. 343 respondents were district-level leaders, including 181 superintendents or assistant superintendents and 162 district leaders in other roles. The remaining 383 respondents were school-level leaders, consisting of 354 principals or assistant principals and 29 individuals in other school leadership roles. The sample included a healthy mix of leaders overseeing different grade levels, although most leaders in the sample worked with elementary or middle school grades. This survey had administrator responses from 88 counties.

While some survey items had missing responses, the nonresponse rate was relatively low (less than 5%), and missing data were therefore excluded from the report. We were able to disaggregate responses by District Leader (N = 343) versus School Leader (N = 383), as well as look at differences by geographic area within those categories, to identify points of consonance or dissonance in responses based on characteristics.

External Stakeholder Respondents

40 respondents took the external stakeholder survey. This included 21 responses from ROEs/ISCs and 19 responses from teacher preparation programs. Respondents came from 25 counties. Given the small sample size, the responses were disaggregated only by role (ROE/ISC versus teacher preparation).

Analysis of Responses

We calculated descriptive statistics for responses to each survey item, both overall and by disaggregated groups. Full disaggregated findings for specific groups can be found in Appendix A. Here, we present a summary of overall descriptive findings.

The data came from a voluntary, convenience survey conducted to inform ISBE's Numeracy Summit. As such, there is likely inherent bias in the sample, in that it oversamples those quite interested in or knowledgeable about state education policy and/or numeracy. We thus view our findings as representative of an invested subsample of state stakeholders, rather than of statewide sentiment more broadly. We base our takeaways not on the precise percentage of stakeholders who selected various responses, but on consonance (across groups) in the relative support for various responses within the same question.

In general, we overwhelmingly found more consonance than dissonance in different groups' responses to questions that were posed on all versions of the survey. This lends support to these relative response rates as real representations of statewide sentiment for these invested stakeholders. We note places where there is some level of dissonance by disaggregated group, as these may indicate places where further investigation is needed to understand statewide sentiment. However, not all such differences are significant or represent true divergence by group.

Findings

This section presents overall findings by different thematic areas probed in the survey. A full rundown of survey findings by disaggregated groups can be found in Appendix A, including some questions aimed at specific groups that we do not discuss here.

Area 1: Training and preparation to teach mathematics

The survey queried the training and preparation teachers had to teach mathematics, particularly at the in-service level. Responses to questions about in-service professional learning suggested that teachers received adequate and regular training. Indeed, a strong majority of teacher respondents (76%) indicated necessary or extensive training/support to deliver math curriculum.

Furthermore, respondents concurred that training for mathematics instruction was offered at least annually. 87% of teacher respondents, 67% of school leaders, and 95% of ROE/ISC respondents indicated that teachers received annual or even more frequent training. There were some small points of divergence in this sentiment. Veteran teachers (6+ years) were slightly more likely to indicate having annual training than novice teachers, while novice teachers were slightly more likely to indicate never having had training. School leaders in the Northeast section of the state (i.e., Chicago and its surrounding suburbs) also indicated relatively more frequent training than their counterparts.

In concert with this, respondents largely indicated that they had financial support for professional learning in mathematics. 92% of teachers, 97% of school leaders, and 99% of district leaders said such funding and support for professional learning was available (at some level). Vastly fewer indicated that they had full financial support for these opportunities; only 29% of teachers, 38% of school leaders, and 48% of district leaders indicated a "great degree" of financial support for these opportunities. There were some slight divergences in this overall sentiment, with novice teachers slightly more likely to

report having no access to funds for training. Additionally, the proportion of respondents reporting no access to funds for training decreased progressively from PK-2 (9.9%) to secondary (6.3%), suggesting slightly improved access or awareness at higher grade levels. However, all were much more likely to have financial support than not.

When asked what kinds of professional learning supports they desired, respondents commonly cited support for curriculum implementation and differentiation of instruction, along with pedagogical content knowledge. Teachers without a math endorsement more frequently selected pedagogical content knowledge and general content knowledge than those with an endorsement, while those with a math endorsement were slightly more likely to indicate no current need for additional professional learning. A sizable veteran teacher population (23%) also indicated no additional professional learning needs. However, the commonly desired supports were top across all groups.

Notably, administrators of education preparation programs at institutes of higher education expressed concerns with teacher candidate preparation for mathematics coursework, including content and conceptual knowledge of teachers, especially at the elementary/early childhood level.

Area 2: Curriculum

Somewhat surprisingly, given the turbulent history of mathematics curriculum selection in the United States, respondents largely indicated satisfaction with math curriculum resources. 61% of teachers and 69% of school leaders were satisfied with their curriculum.

Teachers and leaders were most satisfied with their curriculum's alignment with learning standards. They were least satisfied with aspects of differentiation, such as level of support for diverse learners and flexibility to adapt to student needs.

Area 3: Instruction

Respondents were asked to indicate their predominant teaching styles in mathematics. The top three teaching styles selected were:

1. **Direct Instruction:**
   Teacher-centered approach in which the teacher explicitly teaches mathematical concepts, provides clear instructions, and models problem-solving steps.

2. **Collaborative Learning:**
   Students work together in pairs or small groups to solve mathematical problems, discuss concepts, and share strategies to foster peer learning and communication.

3. **Conceptual Teaching:**
   Students focus on understanding the "why" behind mathematical procedures and concepts, emphasizing deep comprehension over rote memorization.

Both teachers with and without the math endorsement ranked Direct Instruction and Collaborative Learning as their most frequently used teaching methods in math classrooms. Teachers with a math endorsement also favored Conceptual Teaching, while those without showed relatively higher use of Game-Based Learning. This may be related to grade level, as secondary and middle school teachers

(who more often have a math endorsement) were very unlikely to use game-based learning, while elementary teachers were more likely to do so.

Area 4: Assessment.

Overall, respondents felt that assessment was useful at a local level, rather than a state level. Only 35% of teachers, 40% of school leaders, and 45% of district leaders found the Grades 3-8 IAR informative for addressing student needs, while only 34% of teachers, 39% of school leaders, and 34% of district leaders found the SAT informative for addressing student needs.

Conversely, 70% of teachers, 78% of school leaders, and 86% of district leaders found district assessments informative for addressing student needs. Likewise, 83% of both teachers and school leaders, as well as 86% of district leaders, found local assessments informative. Veteran and secondary teachers were a bit more skeptical of district assessments than their peers, but they followed the same broad trends in sentiment about local versus state assessment.

Assessment data were important to respondents. 80% of school leaders and 88% of district leaders said data were important or very important for making decisions.

Area 5: Student perceptions of math.

Respondents were asked to characterize their students' perceptions of math. A plurality of teacher respondents (40%) chose "Mixed" to describe student attitudes about math. The definition of "Mixed" was: "Some students are enthusiastic and motivated, while others express frustration or disinterest; the overall attitude varies significantly across the class."

Despite the plurality of teachers selecting "Mixed," more teacher respondents found students to be positive or very positive (42% selected one of these options) than negative or very negative (10%) in their perceptions. Teachers without a math endorsement more frequently reported positive and very positive attitudes from students, and they reported negative or very negative attitudes less frequently compared with teachers with a math endorsement. Those with a math endorsement were more likely to report mixed or negative attitudes from students. (This may be because teachers with a math endorsement are likely to be in Grades 5-12, rather than elementary school; see the next paragraph for more.)

Teachers with more than six years of experience reported slightly higher rates of positive and very positive attitudes, while early-career teachers observed marginally more negative sentiment. Teachers' perceptions of student attitudes toward math also tended to become less positive as grade level increased, meaning that elementary students were seen as more positive and high school students less so. Students may be less positive about math as the content becomes increasingly challenging.

Teachers believed the primary drivers of student attitudes to be:

- Student mindset, self-confidence, and perceived ability in math (40%)
- Teaching and curriculum delivery methods that are utilized (17%)
- Classroom dynamics (11%)

Other factors—including curriculum—received less than 10% support each.

Teachers without math endorsements emphasized classroom-level (or school level) factors more strongly, particularly teaching and curriculum methods (19.5%) and classroom dynamics (14.5%), compared to endorsed teachers (15.1% and 8.3%, respectively). In the early grades (PK-2), teaching and curriculum delivery, classroom dynamics, and curriculum resources were more commonly noted as influences, though their prominence declined in higher grades. In secondary, external influences, including parental involvement and socioeconomic factors, became more salient.

Area 6: Differentiation.

District and school leaders reported on their strategies for ensuring equitable access to high-quality math instruction. Common strategies included differentiated instruction, use of state/local assessments to understand achievement gaps, and universal screening.

However, a surprisingly high percentage of respondents indicated lack of resources or support for differentiation. 22% of teachers and 13% of district leaders indicated lack of access to resources students need to succeed in math based upon readiness, interest, and learning profile. A small but meaningful number of teachers said there was “no specific support” for students from underrepresented groups in math (although school and district leaders did not seem to concur in this).

The most common support identified for differentiation was interventions/accommodations, followed by advanced math opportunities and bilingual resources).

Area 7: Parent involvement.

A plurality of teachers and school leaders believed that there is minimal involvement from parents and the community in supporting math education outside of the classroom. District leaders were slightly more likely to say parents were somewhat involved than minimally involved, but not by much. Overall, the sentiment that parents were not very involved was clear.

Teachers and district leaders believed that regular communication about student progress and online resources for parents could bridge this gap, compared to other strategies. Across grade bands, teachers consistently ranked regular communication about student progress as the most helpful strategy for connecting with parents. However, the strategy of family math nights was rated more favorably in PK-2 and grades 3-5 than in secondary, indicating shifting weight for family engagement as students advance in grade level. (This difference was also reflected in endorsement status, likely because teachers with the math endorsement are more often found in upper grades.)

Conclusion

The results of this needs assessment were used to foster discussion at the Numeracy Summit, described in the next section.

Key takeaways included:

- **Professional Learning:** Teachers and administrators concurred that teachers had adequate, reasonably frequent, and financially supported professional learning for mathematics instruction. Teachers sought further support for curriculum implementation and differentiation of instruction, as well as pedagogical content knowledge. Teacher educators expressed concern about prospective teachers' preparation for mathematics coursework, including content and conceptual knowledge of mathematics, especially at the early/elementary grade levels.

- **Curriculum:** Teachers and administrators were largely satisfied with their current mathematics curriculum materials.

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- **Differentiation:** To address equitable access to mathematics instruction, administrators reported using differentiated instruction, analysis of state/local assessments to understand achievement gaps, and universal screening. While most respondents indicated they had resources or support for differentiation, a meaningful proportion (about 1 in 5) said they did not have such support.

- **Parental Involvement:** Teachers and administrators indicated minimal levels of parental involvement in mathematics education. They concurred that regular communication about student progress and online resources for parents could bridge this gap, compared to other strategies.

Further survey results by disaggregated groups can be found in Appendix A.

Numeracy Summit Description

ISBE held a statewide summit on June 3, 2025. The agenda for the summit is shown in Figure 1 below. The full slides used to guide the day's presentations, interactions, and panels is available publicly on the ISBE numeracy plan website.[2]

FIGURE 1. ISBE numeracy summit agenda.

8:00-8:55 AM	Registration
9:00-9:15 AM	Welcome & Introduction
9:15-10:00 AM	The National Lens on Numeracy- Figuring Out Fluency Beyond Facts & Algorithms
10:00-11:00 AM	Needs Assessment Summary & Table Talk: Unpacking Key Issues
11:00-11:45 AM	Panel #1 Discussion: The Big Picture of Mathematics Instruction
11:45-12:15 PM	The State Lens on Numeracy: From Literacy to Numeracy
12:15-1:00 PM	Working Lunch & Collaboration: Conversations on Key Findings
1:00-1:45 PM	Panel #2 Discussion: Implementation & Support
1:45-2:00 PM	Summary & Next Steps

The first activity was a presentation by John SanGiovanni, an author and leader in elementary mathematics education. This presentation focused on how fluency with mathematical calculations and computation can lead to broader numeracy, or the application of mathematics to real-world problems. It outlined the types of fluency and how fluency looks in practice. It also examined different strategies for operations and how to teach, practice, and assess those strategies towards the development of fluency.

[2] See https://www.isbe.net/Pages/Illinois-Numeracy-Plan.aspx

The second activity was a summary of findings from the needs assessment. ISBE staff presented their findings from this needs assessment (IWERC's findings were independently derived and presented in the previous section, but they largely overlapped with ISBE's findings from the same data set). ISBE staff overviewed six themes in the survey results related to professional learning, curriculum, instructional differentiation, assessment, parental involvement, and educator preparation. The full ISBE findings can be found in the Numeracy Summit slides on the ISBE website.

The third activity was a "table talk" activity wherein participants reacted to the needs assessment findings through structured discussions in small groups. ISBE staff facilitated discussion at the tables and took notes on participant feedback. IWERC staff analyzed these notes, and the full findings from that analysis are detailed in the next section of this report.

The fourth activity was a panel discussion with Dr. Erica Kwiatkowski-Egizio (Associate Professor at Lewis University), Dr. Mari Altshuler (Teaching Assistant Professor at University of Illinois Urbana-Champaign), Dr. Patricia Buenrostro (Assistant Professor at University of Illinois Chicago), and Dr. Phi Nguyen (Assistant Professor at University of Illinois Chicago).

To begin, Dr. Kwiatkowski-Egizio was asked to speak on how the state should design a numeracy plan that builds on knowledge of how students develop mathematical understanding from early childhood through the end of high school. She encouraged ISBE to draw on what she saw as two fundamental books: Building Thinking Classrooms in Mathematics (by Peter Liljedahl) and Adding It Up: Helping Children Learn Mathematics (National Research Council). The former describes key practices for teachers to use in areas like collaborative groups and grading, while the latter overviews the research literature on teaching and learning in mathematics at various developmental stages (and introduces "strands of mathematical proficiency" for educators to understand and consider). She also encouraged ISBE to explore numeracy initiatives in other states (such as Maryland and New York) and to build a concrete vision with districts and preparation programs about what mathematics instruction should look like.

Next, Dr. Altshuler spoke about what changes are needed in teacher preparation to support mathematics instruction. She acknowledged that many pre-service teachers have insecurities about their own mathematical knowledge and therefore lack enthusiasm for learning math teaching methods. She encourages these teacher candidates to see mathematics content and pedagogy as going hand in hand, as well as to understand that their learning about mathematics content and pedagogy will continue outside and after their math methods coursework. She also feels that challenging pre-service teachers in math methods courses can prepare them to understand how their students feel when learning math.

Then, Dr. Buenrostro was asked to discuss how a numeracy plan could incorporate the sociocultural dimensions of mathematics learning, such as identity, language, and access, and build on student strengths. She identified three shifts that need to occur to make this happen. First, she said that the current classroom structure of "I do, we do, you do" does not work for most students and needs to be replaced with a structure that elicits students' thinking and helps them make sense of mathematical concepts. Second, she said that the classroom environment needs to change from one of the teacher talking and the students listening, to one where students talk more and make sense of what they are learning together. This will result in more conversation, but fewer problems. Third, she said instruction must de-emphasize students who are fast at math and emphasize those with other assets such as problem solving skills. Multilingual students, in particular, may not be fast at math due to all the processing they are doing around reading, speaking, and expressing their knowledge, but they may bring a wealth of mathematical knowledge. She noted that this work starts in educator preparation

programs, where teacher candidates can reflect on themselves as math learners and consider their own insecurities, as well as how similar insecurities might be addressed in their own classrooms. She also argued that the content area exam currently required of teacher candidates in Illinois may be weeding out candidates who could be successful working with diverse students in classrooms, including Black and Latino teacher candidates.

Finally, Dr. Nguyen spoke about preparing teachers to provide effective and equitable mathematics instruction. She encouraged professional learning that follows research-based principles, such as modeling best practice, being active and engaging, and being long-term. For instance, teachers could look at and discuss student work and videos of classroom practice. She discussed the importance of scaling high-quality professional learning to all districts, including using teacher leaders and Elementary Math Specialists. She also noted that professional learning must be aligned to a vision of what good instruction looks like, as discussed previously in the panel. She expressed concerns about teachers' time to engage in this kind of meaningful professional learning.

After the panel discussion, Dr. Craig Cullen (President of the Illinois Council of Teachers of Mathematics) provided background information on his organization and its various successes within the state and nationally. He then reviewed the goals of the Illinois Literacy Plan and discussed how the literacy plan could inform the development of the numeracy plan. He argued that if the numeracy plan mirrored the literacy plan, its goals would be: (1) Every student receives high-quality, evidence-based literacy/numeracy instruction, (2) Every educator is prepared and continuously supported to deliver high-quality, evidence-based literacy/numeracy instruction, and (3) Every leader is equipped to create, maintain, and sustain equitable conditions for high-quality, evidence-based literacy/numeracy instruction.

If these were indeed the goals, the first challenge would be understanding the goals for students, i.e., the skills and proficiencies students should develop. There are past resources on which to draw for these goals, including (a) the National Research Council report, Adding It Up, mentioned during the first panel, (b) the National Council of Teachers of Mathematics standards for content and processes, and (c) the Common Core State Standards content and mathematical practice standards. He questioned how we will reach agreement as a state on these goals and whether there may be different/adapted goals for different student populations.

The next challenge would be tackling teacher preparation. He argued that the expense and time of teacher preparation programs limits access to such programs. He also discussed the breadth of content and pedagogy such programs must cover, as well as differences based on the grade levels candidates intend to teach. He noted the wide range of experiences with student teaching.

Finally, he examined the challenge of supporting in-service educators. He described challenges in equitable access to graduate school and professional learning. He also discussed how self-guided learning should focus on how lessons impact student learning and can be revised to better support student learning. To end, he described the need to identify what happens within each piece of the trajectory of teacher development and learning, from university teacher preparation and student teaching, to graduate school, in-service professional learning, and self-guided learnings.

After this talk, participants were encouraged to have lunch and share ideas on an online note-taking tool. After lunch, a second panel took the stage. This panel included: Dr. Steven Shadel (Chief Knowledge Officer of Mathematics at Great Minds), Esther Song (former District Mathematics Manager for Chicago Public Schools), and Darshan Jain (Director of Mathematics at Adlai E. Stevenson High School).

To begin, Dr. Shadel was asked to discuss the structures that are necessary for districts to faithfully implement a state's numeracy plan. He noted that he appreciated that the plan was not about standard-setting but about a system to support implementation of a vision of mathematics instruction. He expressed that all components of the educational system in Illinois need to work together to support that vision, including the state, the ROEs/ISCs, and school districts.

Next, Ms. Song shared her views on how teachers can best be supported, particularly through professional learning, to implement high-quality mathematics instruction. She engaged the audience in thinking about a time they implemented a new system and argued that such new systems are never simple fixes to all the problems and challenges in a district. She advocated for starting small and getting into the weeds of instruction, such as getting everyone in a district to use a similar "exit ticket" (a formative assessment to check student understanding at the end of a math lesson). The panelists then discussed amongst themselves the challenges of supporting districts with differential capacity for teacher support (such as a district with multiple math coaches versus a district with none).

At this point, Mr. Jain spoke to the role of math leaders in balancing system-level coherence in implementing math instruction with the need to promote flexibility across schools and teachers to ensure specific student needs are met. Mr. Jain argued that the goal is to promote principles, not provide prescriptions. Schools and educators should have a shared vision or "why" for mathematics instruction, but they should have flexibility to figure out the "how." ISBE could assist in developing that shared vision by launching the numeracy plan with tools and resources that are aligned to the vision or "why." ISBE can also define what the "non-negotiable" principles and structures are, then allow innovation within that. Illinois could be an innovation hub where districts have uniform statewide metrics and local data to inform progress towards the vision. Flexibility does not mean fragmentation. Flexibility can happen not in what the vision is, but in local adaptations and models that align how they do the work to the vision. Districts can be paired to hold each other accountable to the vision and to share best practices in working towards the vision.

Finally, Dr. Shadel spoke about how collaboration between educator preparation programs, higher education institutions, and external organizations can support the implementation of the numeracy plan across the state. Like the previous panelist, he emphasized having a shared vision that sets the goal for everyone. People can work in silos while executing towards the same vision, if they share the vision and attempt to speak a common language about it.

After this panel, ISBE staff wrapped up the event and encouraged participants to stay involved during the development of the numeracy plan.

Conclusion

The Numeracy Summit offered a range of perspectives on mathematics teaching and learning that ISBE can consider in its development of the numeracy plan. Across presentations and panels, key takeaways included:

- **Vision:** Many presenters spoke to the need for a shared vision for the state around mathematics instruction, including a vision for what students learn and a vision for what mathematics instruction that promotes such learning entails. These presenters identified seminal resources (from the National Council of Teachers of Mathematics and the National Research Council, for instance) that can be used to build this vision.

- **Coordination:** Presenters believed that all the organizations in the educational ecosystem, from ISBE to ROEs/ISCs to institutes of higher education to school districts, must align towards the shared vision and work together. ISBE can provide tools, resources, and structures to promote the vision and collaboration, but ultimately all the players must align.

- **Capacity:** Presenters spoke to the need for high-quality professional learning at scale, noting the research-based elements of such learning (such as being sustained, active, and focused on student learning of mathematics). However, they questioned how to equitably provide access to such professional learning given differential resources at both the district (e.g., districts with multiple math coaches versus none) and personal (e.g., teachers with time and money to access graduate school, versus not) levels.

These takeaways represent key challenges for ISBE to consider.

Numeracy Summit Participant Feedback

Background

Participants in the Numeracy Summit were asked to discuss questions at their tables. ISBE staff took notes at each table about the Discussion Questions (see Table 1) they were assigned. Tables were purposely assigned different starter questions, so that all questions would get some level of response. As such, not every table at the Summit answered all Discussion Questions.

TABLE 1. Discussion Questions analyzed and the number of Tables that provided a response.

Question Number	Question Description	Number of Tables with responses
1.1	As we develop the numeracy plan, what instructional shifts are most critical for advancing students' mathematical understanding, problem-solving, and real-world application?	9
1.2	What do pre-service and in-service educators need to know and be able to do to implement these shifts effectively across diverse learning contexts?	7
1.3	How can professional learning and support systems be aligned to build and sustain educator capacity for high-quality, responsive math instruction?	6
2.1	How can professional learning be reimagined to better prepare all educators to meet the diverse academic, cultural, linguistic, and social-emotional needs of today's students?	13
2.2	What would it take to ensure that professional learning is equity-driven, ongoing, relevant, and aligned with curriculum, instruction, and assessment to improve student outcomes?	10
3.1	The needs assessment survey indicates that district and school-level assessments currently play a significant role in shaping mathematics instructional decisions. This Finding raises an important question: How can we more strategically use assessment data-- formative, summative, diagnostic, and standardized-- to accelerate student learning and close achievement gaps?	11
3.2	What specific ways can assessment-informed instruction be designed to better respond to students' needs and promote deeper, more rapid, learning?	8

Analytic Methods
Deductive coding was used identify themes in participants' comments. IWERC staff created parent codes using the issue topics garnered from the needs assessment survey. Inductive methods were then used to create child codes within these parent codes. Appendix B Table B1 includes the codebook for responses to all Discussion Questions, with parent and child codes nested accordingly. Codebooks for each Discussion Question are also in Appendix B, as not all codes were applied to all Discussion Question responses.

Notably, response length and specificity differed with each table and question. Additionally, note takers at each table had different methods of collecting table responses and recording them. For instance, several note takers recorded a thought or topic and indicated the number of people at the table who agreed (e.g., +4). Other note takers indicated what each member of the table had to say by numbering participants. However, the majority of note takers recorded responses as a continuous thread without indicating weight or frequency of topics or thoughts at their table. The notes did not indicate if all members had the opportunity to speak or if the notes represented the wide range of thoughts present at the table. As such, the analysis of these notes is not meant to indicate weight, frequency, or relative importance of topics. Rather, it is meant to describe the breadth of topics discussed at the Numeracy Summit, with such topics to be considered with equal weight when planning and creating the numeracy plan.

Findings
Participant feedback on each Discussion Question is presented below. Importantly, these summaries are an attempt to reflect the diverse viewpoints shared by participants. They are not the views of either ISBE or IWERC, nor are they necessarily representative of all participants in the Summit.

1.1 | As we develop the numeracy plan, what instructional shifts are most critical for advancing students' mathematical understanding, problem-solving, and real-world application?

Discussion Question 1.1 elicited a wide range of responses from participants spanning across assessment, curriculum, educator preparation, pedagogy, professional learning, and more. Each are detailed below. The full codebook for this question is in Appendix Table B2.

Assessment:
Two topics regarding assessment were included in the discussion of this question. One table noted the default for teachers is to be backwards planning to state assessments (i.e., determining what is on the state assessment and building their teaching plans from there) as opposed to the state assessment taking the lead from what is being taught in the classroom. The second topic was the difficulty in capturing problem solving strategies in current assessments.

Curriculum:
Vertical planning (i.e., alignment of curriculum, standards, and goals across grade levels) was discussed at three of the nine tables. Participants specified that calibrating as PK-12 teams and focusing on big grade level transitions were essential and valuable. In addition to vertical planning, one table remarked on the need for district alignment, specifically that teachers and administrators are speaking a common language about math. Tables also noted the current focus on rote memorization and questioned if it should shift to problem solving. Regarding curriculum, a table looked to two other states as exemplars or models. Specifically, they queried if Illinois should follow Texas, which approves textbooks, or California, which vets textbooks and curriculum used in schools.

Educator preparation:
Tables discussed the need to train pre-service teachers to have math content knowledge in addition to pedagogical knowledge.

General:
General comments were made at several tables about the need for common language around math instruction between students, teachers, districts, and the state. Tables also made connections to the Literacy Plan in that the Numeracy Plan could be structured in a similar way.

Pedagogy:
A wide range of topics were discussed surrounding pedagogical shifts. Several tables advocated for a shift to the CRA method of teaching (i.e., concrete-representational-abstract), while other tables thought instruction should be more goal-oriented with a focus on the end goals as opposed to the process. Several tables were aligned in that teaching should move away from direct instruction and towards teachers as facilitators. The idea of promoting diverse ways of thinking and encouraging that there is more than one way to solve a problem in the classroom for both students and teachers was also mentioned. The topic of fluency came up in a number of ways for participants. Some participants understood the need for fluency and thought teachers should be teaching for math fluency, while others indicated they had a lack of understanding of fluency. Participants also called for moving away from procedural methods to more balance with what is conceptual by nature. Lastly, many tables noted the importance of teachers having math pedagogical content knowledge (PCK), so they can understand underlying mathematical concepts.

Professional learning:
Professional learning was discussed in three major ways: in-service teachers' observations, professional learning approaches, and professional learning utility and administration. In-service teachers' observations and professional learning utility and administration came together when tables noted the need to build up administrators' capacity for coaching teachers when administrators observe them reverting back to old ways of instruction. For professional learning approaches, participants noted a need for shifts to universal practices (e.g., common practices across the state), as well as differentiation in professional learning for instructional practices compared to content. Participants also noted the need for newer teachers to be fully enculturated into the school or district culture and to absorb the experiences of other teachers.

School/district operations/culture:
Participants noted that with possible shifts coming due to the numeracy plan, they did not want administrators or the state to place blame on teachers if plans are not executed properly.

Student attitudes:
One table discussed the competitive nature of math classrooms. Methods such as board races increase competitiveness in students but once students stopped winning, they were then demotivated by math.

Student learning:
Mentions of student learning included allowing students to express their thoughts, encouraging students to think outside the box when it comes to problem solving, and believing that teachers' PCK is the root of students' understanding and discourse about math.

Teacher attitudes:
One table noted that when teachers get flustered, they resort to tactics that undermine conceptual understanding, indicating support is needed when trying something new.

Questions from participants.
Throughout the recorded responses, participants frequently posed questions for consideration. In each section, we note such questions as they arose from the discussion.

1. How do teachers/students demonstrate they are thinkers of math?
2. Should Illinois shift to state approval of curriculum?
3. How are we [preparing] teachers in K-2 to help think of themselves as "doers" in math and to encourage students to be more flexible?
4. What are we elevating and prioritizing in instruction so that good math thinkers are good test takers?

1.2 | What do pre-service and in-service educators need to know and be able to do to implement these shifts effectively across diverse learning contexts?

Discussion Question 1.2 also had a breadth of responses from participants, including community/parental involvement, curriculum, educator preparation, pedagogy, professional learning, teacher attitudes and workload, and more. A full codebook for this discussion topic is available in Appendix Table B3.

Assessment.
Only one comment was made with regard to assessment for this Discussion Question, which was the need for all teachers to understand the purpose of assessments by knowing how and what to assess in their math classrooms.

Community/parental involvement.
One table remarked on the possibility of parents pushing back on new ways of teaching and learning math and the need to provide supports to teachers in this scenario.

Curriculum.
Several topics surrounding curriculum were addressed by tables. Tables remarked on the fidelity to new curriculum, being specifically hampered by poor rollouts, lack of understanding components, and slow and difficult processes of professional development for said curriculum. Learning standards were also discussed in that teachers should find alternative ways to teach learning standards when new curriculum is introduced.

Participants noted that teachers who have not taught in different grade bands do not necessarily understand the connection between grades, a disconnect administrators have observed widely. Further, this lack of connection between grades has the potential to impact students' math fluency. Together, these concerns call for vertical planning within districts and schools.

Educator Preparation.
Two tables discussed how pre-service and new teachers can come into classrooms with beliefs and ideas about how math should be taught, stemming from prior experience or training, that are not

helpful or feasible in their new teaching context. The tables talked about this as a needed process of "unlearning" past practices or beliefs. An example is pre-service teachers who were taught lesson preparation from another perspective that is no longer viable in math, or may have experienced good math instruction, but are then placed at a school that is oppositional to that type of instruction. Similarly, participants noted that teachers often teach how they were taught, which may include methods or strategies that are no longer ideal, and they should be open to learning new things. Tables shared a sentiment of pre-service teachers needing to be comfortable with not knowing things and trusting they will soon.

Educator preparation programs were discussed as having limited time to introduce new topics, with one area (edTPA preparation) noted as taking priority in the last year of study, using time that could be spent on other preparation (please note that, as of the date of this report's release, edTPA, a teacher performance assessment, has been waived as a state requirement through 2029). Relatedly, participants noted that pre-service teachers are taught common strategies and routines to be used across subjects, which may or may not be appropriate. One such support noted was to provide pre-service teachers with mentors to see instruction modeled by more experienced teachers.

Tables also discussed the need for math-specific training/knowledge in addition to pedagogical knowledge (i.e., PCK) as well as real-world experience (e.g., student teaching and classroom internships) for pre-service teachers so they see how the theory they are taught is applied in a classroom setting. It was thought that the current teacher preparation model makes it difficult for teachers to gain such content knowledge. However, participants noted an exemplar or model in Illinois State University's year-long practicum, with one participant calling it the state's most effective system for student teaching.

General.
Several general comments were posed regarding shifts for educators. Tables remarked on the differences between elementary and high school teachers, noting elementary teachers are more generalists while high school teachers are more specialists. However, one table saw subject splitting (i.e., departmentalization) in elementary teaching as an opportunity to be more aligned with this notion of specialization in high school settings. Participants also made connections to English Language Arts (ELA), noting that many teachers may have more educational experience in literacy and thus plan their math instruction similarly. However other tables noted that ELA and math are different and thus should be approached differently. Lastly, participants called for moving away from associations between being good or bad at math equating to being intelligent or not, a mindset prominent throughout discussion questions herein.

Pedagogy.
Participants discussed methods of teaching when instructional shifts occur. One example was the idea of diverse ways of thinking – specifically, for teachers to be open to new ways of thinking and teaching as well as knowing how to unpack learning standards and think through alternative ways to teach them. Tables shared the importance of teaching in a fun and engaging way but also for fluency in students' math understanding. Relatedly, participants noted the need for teachers to understand what math really means and orchestrating discussions with students as well as understanding the "why" behind instructional approaches. Lastly, tables mentioned the need to teach the difference between tools and strategies and what will help students in future years of math.

Professional Learning.
For approaches to professional learning, tables noted the need for all teachers to have math PCK and be able to support students' math skills and learning. Participants also discussed enculturation (i.e.,

understanding and integrating the culture of education, specifically a particular school or district in this context) in a dichotomous way. In one sense, participants thought pre-service teachers need to adapt to district and school norms, but, on the other hand, others were of the mindset that in-service teachers should be more open to the ideas of pre-service (or new) teachers instead of being told "Don't do it that way; we do it this way." Another approach discussed in professional learning was to remember teachers are learners as well and should be treated as such with supports.

For types of professional learning, participants spoke of the need for mentors as well as collaborative practices such as paired teachers and the role they play in continued learning. Participants also called for increased communication between higher education, ROEs, and school districts for professional learning opportunities.

In terms of professional learning administration, tables discussed the need for administrators to have math PCK in order to understand how students are being taught and what math looks like at each grade level. Participants also noted that administrators need to support teachers when implementing new practices and provide ongoing opportunities for support through continued engagement and check-ins with teachers.

Teacher attitudes.
Several tables noted concerns about teachers' attitudes, indicating areas of future support. Specifically, participants noted teachers may experience anxiety related to not being strong in math but having to teach it, as well as the need to have confidence both in teaching as well as understanding of math if/when parents push back on changes to teaching and learning. Lastly, current educators need to be open to new ideas and not dismiss them because these ideas are new or unknown.

Teacher workload/responsibilities.
Several tables also noted teachers' capacity to implement changes. For example, participants noted that teachers are pulled into many tasks that may or may not relate to their math instruction. When it comes to planning, tables remarked on the need for teachers to plan where to spend their time and not focus on busy work, as well as the need to intentionally plan every year as new students come in and may have different needs.

1.3 | How can professional learning and support systems be aligned to build and sustain educator capacity for high-quality, responsive math instruction?

Responses from Discussion Question 1.3 focused mainly on professional learning, with some comments on curriculum, general topics, and questions from participants. A full codebook for this discussion question can be found in Appendix Table B4.

Curriculum.
One participant recounted an experience they had with a curriculum rollout years ago that was a negative experience because there was no understanding of the curriculum and how it worked. Now, their district brings in the curriculum writers to explain how the curriculum works (to encourage fidelity of implementation), and the rollout has improved drastically.

General.
Two tables made comments regarding supports they had at the start of the COVID-19 pandemic that they do not have anymore: collaborative learning when something new was implemented into the

classroom and funding for instructional coaching. Both tables indicated these supports would be beneficial now but are no longer available to them.

Professional learning.
Various topics within professional learning were discussed including external partnerships, approaches, types, and administration of professional learning. Several tables remarked on the need for external partnerships in the form of professional learning from curriculum writers and higher education partners, as well as support for professional learning from ISBE and the teachers' unions.

For approaches to professional learning, participants are looking for professional learning that offers math content knowledge (i.e., math PCK), opportunities for teachers to be partners in decision making for professional learning opportunities, and consideration of the legacy of how teachers were taught in the design of the professional learning.

For types of professional learning, participants discussed ideas of using professional learning communities (PLCs) or paired teachers in their schools to model new practices and plan lessons, similar to train-the-trainer models of professional learning. Additionally, tables commented on the need for administrative or co-teachers to observe new instructional practices and debrief afterwards for continued learning. Participants noted the need for instructional coaching in terms of both instructional practices and math content knowledge. Ideas were shared of creating numeracy hubs (similar to current SEL hubs) to support teachers across regions. Participants also said they found value in modular professional learning opportunities that were offered by higher education partners.

When discussing utility and administration of professional learning, tables noted the need for administrators to have math PCK to fully understand the "why" of math instruction in the classroom. Participants discussed the need for equitable access to professional learning and had diverging conversations around which teachers are higher priority to receive such learning, as well as alignment of professional learning opportunities across grade bands, schools, and districts. One participant provided an example of implementing a district-wide schedule, with a common planning time across the district. All first-grade teachers, for example, could join a Zoom at the same time to talk about math instruction. Funding was brought up with regard to continuing interventions or implementations even when funding is not secured.

Questions from participants in response to this Discussion Question included:

1. As a teacher, how do you identify high-quality professional development?
2. What would it look like to ask [TeachPlus] to build something out for teachers?
3. How can efforts we come up with be sustained during lack of funding?
4. Who is trained for intervention? Will intervention have an aligned protocol [or] blanket guidelines? Is using websites/apps as classroom management and support really intentional, or is it used as an incentive to complete classwork?

2.1 | How can professional learning be reimagined to better prepare all educators to meet the diverse academic, cultural, linguistic, and social-emotional needs of today's students?

Responses from Discussion Question 2.1 contained topics related to assessment, curriculum, educator preparation, pedagogy, professional learning, and more. Appendix Table B5 contains the full codebook for this discussion question.

Assessment.
Participants discussed a range of ways assessments can be reimagined to meet the needs of a diverse group of students. In terms of approaches to assessment, one table remarked on the need for real world problems when teaching big concepts as well as the need for more diversity and representation in assessment items to be more relatable to all students. For assessment items, specifically, a call was made for a state-wide problem bank for educators to use. Others shared their opinions on current forms of assessment including the idea that multiple choice assessments do not improve student learning outcomes. Several tables pressed the importance of assessment data and the need for tangible, local data to drive professional learning. Lastly, participants noted that more assessment tools are needed for district and local use. Additionally, if teachers are teaching to the test, they need to identify the bigger picture for their students.

Community/parental involvement.
Several tables raised concerns on the lack of inclusion of parents and the community in professional learning opportunities as well as the push back from parents and communities on changes to instruction because, as one table put it, they don't understand how math is used. That said, participants offered solutions. Potential solutions from tables included parent and community outreach to bring everyone closer together, providing parents the strategies for math instruction and educating them on how their child is learning math, creating parent guides for coming changes, providing clear communication on what students are learning and what is needed to meet standards, and help from ISBE and ROEs to provide parent education, as opposed to districts, as sometimes outside experts are more helpful.

Curriculum.
The issue of time was discussed in relation to curriculum. One table noted there is not enough time to teach all the strategies needed by students, particularly in elementary school. Similarly, participants shared that math feels overloaded in terms of content within a school year compared to other subjects. One solution was noted by several tables: integration. Tables expressed there is currently not enough math integration and that there should be more math in other core subjects like social studies or science. Regardless of how math is taught, tables encouraged evaluating the fidelity of all curricula after implementation and continuously monitoring support being offered to staff.

Educator preparation.
The topic of educator preparation programs (EPPs) was brought up by several tables when discussing this Question. Specifically, participants noted that better teacher preparation programs are the key to innovative professional learning. One proposed way of utilizing EPPs was to issue professional development for EPP professors to teach math PCK to in-service teachers. Some tables also shared a perception that teachers are much more trained to specialize in reading than in math, due to the sheer number of hours they have in EPPs related to literature, while the same number of hours is not provided in math. As such, a table made the call for a requirement of EPPs to have more math instruction included.

General.
Similar to what was noted above in the educator preparation section regarding teachers as inherently more skilled in literacy, other general connections were made to ELA by tables for this Discussion Question. One table's view was that math teachers are often stigmatized because districts often focus more on ELA and not enough on math. Moreover, math is often disconnected in nature compared to ELA. Math often has more standards and less time to practice fundamental skills compared to ELA. The differences between elementary and high school math education were discussed at several tables. Participants noted that high school teachers are often specialized and more likely to hold a personal passion for math, whereas elementary school teachers are more generalists and may not have that same passion for math. It was noted this difference may affect students because the teaching could be less passionate or enthusiastic at the elementary level. At the same time, other tables noted that because elementary teachers are more generalists, it is not realistic for them to be content experts in everything. Tables also thought higher grades have more standards and concepts compared to elementary math education.

Several tables discussed the notion that it is socially acceptable to be bad at math or labeled as "not a math person", a notion that was overwhelmingly critiqued by tables. Participants noted that this sentiment was coming not just from students but also from educators and parents. Participants went on to call for a paradigm shift to the belief that math is for everyone and that everyone is a math person.

Pedagogy.
Participants remarked that math is currently taught as an isolated skill rather than focused on numeracy and big-picture thinking. Tables placed emphasis on teaching as facilitation, supporting math discourse and thinking in classrooms as opposed to rote memorization and direct instruction. An overall sentiment across tables was ensuring teachers know to be flexible and that students and teachers alike can think differently and approach problems differently.

Professional learning.
Four broad topics were discussed by tables regarding professional learning: administrator evaluations of in-service teachers, professional learning approaches, professional learning types, and professional learning utility and administration.

For administrator evaluations of in-service teachers, participants noted that administrators do not necessarily know what to look for when evaluating their teachers. Administrators need the confidence and knowledge to know what to look for specifically, including the thinking, discourse, and strategies that their math teachers are supporting in their classrooms.

For professional learning approaches, most tables discussed the need for teachers to have math PCK and that developing math PCK is an ongoing process that needs continued support and development. More specific approaches included professional learning on math practice standards, math foundations for substitute teachers, and culturally responsive teaching and learning (CRTL) standards, including help for educators to unpack their own biases and address their own identities. Tables noted that professional learning should be reflective of shifts we wish to see and build universal practices. Other tables looked to the Swiss cheese approach of looking for gaps in professional learning to fill with multiple kinds of opportunities. Lastly for approaches, participants wanted teachers to have choice in their own professional learning as well as help identifying what professional learning is most appropriate for them.

Types of professional learning discussed included collaborative approaches such as PLCs and mentors to plan and learn from one another, as well as observing or gaining hands-on experiences

through job-embedded professional learning. Instructional coaching was another frequently cited type of professional learning of which participants wanted more. Several tables discussed the need for increased SEL training, with one table sharing an **exemplar or model** in the Wheaton-Warrenville district, which has a dashboard that supports socio-emotional learning. Professional learning within grade level was also noted as a helpful support. One solution provided by a table was "microcredentials" to increase participation in professional learning.

Participants spoke at length about the utility and administration of professional learning. Participants recognized the need for professional learning that is aligned to the curriculum that is being used at the school or district. Tables also discussed concerns related to funding and time constraints, specifically, that districts are lowering their professional learning budget because of financial uncertainty as well as offering as little as four days allotted for professional learning in the school year, indicating places for support in both areas. Another major topic included administrators' roles in professional learning. Participants indicated that administrators need to provide help identifying supports in the way of local needs assessments, asking teachers reflective questions regarding their instructional delivery, being aware of professional learning opportunities, priority setting with teachers, understanding teachers' background and what continued learning is needed, and following up with teachers regularly. Participants thought professional learning is rarely "one and done", and administrators are responsible for following up and providing support for ongoing learning opportunities. That said, another table noted that administrators also need support to do this work and should be considered when discussing supports for math PCK. Ways of increasing participation in professional learning included offering opportunities inside of school/contract hours and stipends, which one participant stated was their successful **model** as rural district.

Lastly, one **exemplar or model** for professional learning was ROE 17's math center, which includes monthly grade-level meetings inside school hours across the region to explore pedagogy topics, games, books, and manipulatives, with a theme of working collaboratively. The table noted this model could be used as a blueprint for other ROEs in the state.

School/district operations/culture.
Tables discussed rethinking the organizational culture of their schools and districts in a variety of ways. The role of administrators was a major theme of discussion. For example, participants felt that administrators need to be comfortable in math classrooms to observe and support teachers more regularly. Similarly, participants want administrators to be more aware of professional learning opportunities for teachers and for school and district leadership to require such opportunities when needed. The idea of schools and districts bringing in local businesses to support efforts was brought up a few times across tables, indicating reimagining could be happening at a more local level. One table suggested a year-round calendar can provide time to implement changes, while another noted that current institute days focus on new state mandates as opposed to focusing on math instruction, indicating a potential reimagining.

Teacher attitudes.
Participants noted that teachers are burnt out from students' socio-emotional needs and made a call for more attention to educators' mental health.

Teacher workload/responsibilities.
Participants discussed the breadth of responsibilities teachers have at their schools and districts and had concerns about too high of expectations being placed on teachers to improve math instruction while handling other aspects of their job. One table pointed to a potential trade-off between these increased expectations for teachers' math instruction and other responsibilities that are part of the job.

Questions from participants in response to this Discussion Question included:

1. How is [professional learning] currently handled?
2. How are [administrators] adequately evaluating math teachers?
3. Can teachers come in to train long-term substitutes and mentor them?
4. Does data analysis work if [teachers/administrators] do not understand what to do with the data?
5. Are teachers experts in the skills they are teaching? Do they have numeracy skills and number sense? Are preparation programs accurately preparing teachers? Is this the appropriate avenue for this kind of learning?
6. How can we transmit the message that everyone is a math person?
7. How can we support administrators/coaches/etc. to understand the different components of math instruction?
8. How many programs are preparing teachers to teach math?
9. How do we motivate people to get the Elementary Math Endorsement?
10. How do we build in more math into the educator preparation programs?
11. Are we giving teachers enough time in the classroom to teach those strategies?
12. What is the definition and the support of the school board?
13. How much time is spent on social emotional learning in the classroom?
14. Is there someone internally (e.g., curriculum specialist, instructional coach) that has been assigned to lead conversations focused on mathematics? How do you build leadership capacity in leading these conversations?
15. How can we structure math time to meet all needs?
16. When new things are implemented, what is the accountability (in a non-punitive manner)?

Resources.
Participants also shared resources that others may find of interest. Related to this Discussion Question, participants shared the *New Teacher Center*, and a book titled *Building thinking classrooms in mathematics* by Peter Liljedahl.

2.2 | What would it take to ensure that professional learning is equity-driven, ongoing, relevant, and aligned with curriculum, instruction, and assessment to improve student outcomes?

Similar to the previous section, responses to Discussion Question 2.2 mostly surround professional learning, though other topics such as assessment, curriculum, teacher workload, and more are discussed. A full codebook for this discussion question is in Appendix Table B6.

Assessment.
Participants discussed the need for real world connections in assessments to aid in the relevancy of math instruction.

Curriculum.
Tables expressed the need for math integration into all subject areas as well as the need for math skills and concepts to be taught (as opposed to rote memorization), as skills and concepts are more transferrable. Participants also saw the need for continued curriculum evaluation as a way to improve student learning outcomes.

General.
Participants felt strongly that teachers and administrators alike should have the core belief that all students are capable of learning math.

Pedagogy.
One table discussed the need to leverage technology as a tool for both teachers and students without becoming reliant on said technology. It is important to focus on mental computation as opposed to continuous use of devices for problem solving.

Professional learning.
Participants cited the need for external partnerships including mutual professional learning between districts and EPPs with EPP representation at district professional learning days and professional learning tied to the numeracy plan provided by ISBE and/or supported by ISBE to carry out. Tables also noted that teachers' unions will likely require a specific type of work to happen during the professional learning period.

Other ways professional learning could change would be for it to align with and integrate math professional learning into teacher evaluations or for it to use clinical time to have support staff observe math instruction.

For professional learning approaches, tables noted a lack of basic math skills in many math teachers, calling for increased math PCK in professional learning. They also noted that teachers are driving much of the work and should be recognized as partners and decision makers and be offered choice in their professional learning.

Types of professional learning discussed in this Discussion Question included collaborative arrangements such as PLCs with both pre- and in-service teachers, higher education partners with EPPs, instructional coaches provided by the state, and modular trainings that can be buildable.
In terms of the utility of professional development, participants cited the need for intentional plans to allow time to digest the learning, as well as the need for actionable takeaways to then be implemented in the classroom. In terms of administration of professional learning, tables raised concerns about funding needed from school boards to assist with the implementation and coaching during and after professional learning, the need to reduce time constraints during school hours (such as staff meetings

and planning time) to make room for required professional learning, and current inequities in terms of access, opportunities, time allotted, and partnerships with higher education.

School/ district operations/ culture.
To ensure professional learning is working as intended, participants noted that schools/districts should (1) embed professional learning into the school calendar with time dedicated to this work and (2) ensure school and district staff (including school boards) understand math is a priority and what funding is needed to complete such work. Tables also noted the need for the messaging around the numeracy plan to be about school improvement and for the numeracy plan to be short enough for districts to manage better. However, some participants noted that many districts across the state are struggling to fill positions and are using stop-gap measures such as year-round substitute teachers that may make implementing professional learning for the numeracy plan difficult.

State mandates.
Participants made a general call for ISBE to step in and mandate any work or professional learning regarding the numeracy plan to increase buy-in from partners.

Teacher attitudes.
Tables shared ideas of changing the mindset some teachers may have regarding instruction. Some teachers may have preconceived notions of teaching that worked for them but may no longer be a best practice and should thus be open to new ideas and methods of teaching.

Teacher workload/responsibilities.
Participants discussed the need for educators to be attuned to the needs of their current students and to plan accordingly.

3.1 | The needs assessment survey indicates that district and school-level assessments currently play a significant role in shaping mathematics instructional decisions. This finding raises an important question: How can we more strategically use assessment data--formative, summative, diagnostic, and standardized--to accelerate student learning and close achievement gaps?

Topics surrounding assessment were the most discussed for Discussion Question 3.1, but other topics of curriculum, pedagogy, professional learning, and more were also of note. A full codebook for this discussion question is in Appendix Table B7.

Assessment.
Discussion of assessments had the widest range of topics for this Discussion Question and included topics of approaches, items, types, utility and administration, district and local use, grading practices, and more.

Assessment approaches included assessing student strategies for problem-solving both mathematically and verbally, moving away from always getting the "right" answer and instead emphasizing the problem-solving aspect or looking at the steps or strategies students used, and prioritizing asset-based approaches to assessments as opposed to deficit models of filling gaps in students' knowledge. Participants also noted that games and conversations are a novel way to assess student understanding while relieving the pressure of "right" answer assessments.

Several tables called for assessment items to be more closely examined for quality through item analysis. They also noted concerns around the use of multiple-choice exams since many students are not used to that assessment item type in math courses.

Many types of assessments were noted throughout the tables' discussions with pros and cons attached to each of them. Benchmark assessments, while helpful to identify getting students to a goal, can sometimes happen too late to adjust instruction. Norm referenced assessments have some of the highest cut scores in the country, which indicated participants wanted to move away from them. There is a current lack of quality diagnostic assessments for math, indicating participants would use them more if provided. Several tables noted a want for pre- and post-tests because pre-assessments could be used to understand existing gaps. Foundational assessment (such as the one provided by Reveal) helps group students based on skills. Assessments based on strategies used (such as Math Running Records) can be used for evaluating fluency and are useful in small group settings. Lastly, one-on-one interactions between students and teachers as a way to assess students' problem-solving processes and assess for individual student needs were noted as beneficial for both teachers and students.

For utility and administration of assessments, one theme emerged about teachers and administrators not knowing how to use assessment data, so the data ends up being reviewed and shelved. As such, teachers and administrators may need support in learning how to read and understand data to then use it in meaningful ways. Possible solutions shared included providing time for reflection on assessment data, holding regular data meetings, and providing one-pagers with grade level data highlighting important takeaways. One table suggested looking at assessment data from other schools with shared demographics to learn what is working well for them and to then model the same. Tables thought assessments are rarely designed with teachers' use in mind and were more for districts gathering data. Participants noted the importance of choosing the appropriate assessment tool but could benefit from training on using formative assessments in a meaningful way. One idea was to use common assessments to curb some concerns. Many tables noted that state assessment data arrives too late to provide immediate feedback and therefore has little value as a diagnostic or placement tool. There is also too much emphasis on state testing and not enough on students' learning journeys.

The majority of tables that were assigned to this Discussion Question talked about the need for assessment data to drive instruction whether for whole classrooms or small group settings. Most tables agreed that assessment data can improve instruction to meet students' needs, but others thought data helps drive instructional decisions but not for student interventions.

In discussions of district and local assessment use, participants remarked on the need for alignment within districts by perhaps offering common assessments. However, participants also noted that teachers feel pressure to align district or local assessments to their curriculum which limits teachers' autonomy and flexibility. Several tables discussed their districts' use of the NWEA MAP assessment and said it provides more immediate results, includes more grade levels, and garners more student investment compared to state testing. Tables also discussed the use of the MAP domain scores as opposed to the overall MAP scores, as well as remarked that MAP benchmarks are set too high which makes it difficult for students to demonstrate growth.

One table discussed grading practices and whether they should be standards-based or traditional. They called for guidelines for grading practices so that schools and districts alike are more aligned.

In addition to the comments above regarding state assessments, participants also noted state assessments being computerized makes it easier for students to skip through problems, as well as the frequent use of word and story problems that students may not be used to in their regular math instruction. Several tables also noted the use of backward planning to state assessments as both a good and bad practice.

Lastly, a few tables noted the need for local and district assessments to be more closely aligned with state assessments.

Community/parental involvement.
Tables had divided views on the role parents play in math assessments. Some participants viewed state assessments as catering more to parents than to schools or districts. Others thought that assessment data would be helpful for informing parents on where their child is on their learning journey. Additionally, while previous responses to other Discussion Questions called for more parental involvement, here participants called for less parental involvement before kindergarten because, as one table put it, it may be detrimental if parents are using ineffective strategies to introduce math concepts.

Curriculum.
Tables discussed areas to better support curriculum in a number of ways. Some tables noted that many teachers are not able to adapt curriculum in the ways they need to meet individual student needs. Participants also noted that there is currently no unity in curriculum across districts, but many districts cannot force a common curriculum on their schools. Similarly, comments were made that better curriculum mapping is needed but local control gets in the way. Participants noted time constraints in that teachers have limited time to use multiple strategies. Lastly, there was a stated need to examine math progression specifically for grades 6-12 and the practices that are used along those grade bands.

Educator preparation.
Participants called for EPP methods courses to include strategies to help teachers make connections.

General.
One table made connections to ELA, specifically noting the last six pages of the ELA Common Core State Standards (CCSS) are needed for math.

Pedagogy.
Participants discussed the need for fluency by utilizing methods such as Number Talks, with an emphasis on conceptual understanding rather than over-proceduralizing math concepts. Instructional differentiation, specifically differentiation practices, were brought up at a number of tables during the course of the discussion. Some thought it best to focus on early childhood education for foundational gaps in students' math understanding and to mitigate widening gaps, while others discussed flexible grouping versus ability grouping. Two tables discussed the idea of teaching for mastery, but in oppositional ways. One table saw teaching for mastery as an ideal model (and looked to the example of the Japanese model of teaching for mastery) to ensure students understand before moving onto new concepts. On the other hand, a different table saw teaching for mastery as an old way of teaching resulting in lower proficiency because of the time it takes for all students to reach mastery.

Professional learning.
Topics of professional learning types and utility were discussed amongst tables. In terms of type, while instructional coaching had been noted previously as a major support, for this Discussion Question tables noted coaching may not be as advantageous for newer teachers since coaches typically focus on clusters to guide instruction. Another table provided a possible solution through collaboration with other teachers to model instruction and then plan together. In terms of utility, special education generalist teachers may struggle with math concepts and need more support in their role.

School/district operations/culture.
Participants noted several concerns related to district operations. One table noted large curriculum shifts happen at districts, with one participant noting their district had three different math curricula in as many years. Another table remarked that district-wide meetings feel unproductive because they are more akin to lectures than problem-solving sessions. Tables also noted inconsistent messaging across grade levels of elementary and middle schools. Lastly, there was concern that non-certified and visiting international teachers often do not fully understand assessment requirements and therefore need additional support that can be more complex.

Questions from participants in response to this Discussion Question included:

1. Do [teachers and administrators] have the capacity to analyze the [assessment] data?
2. How do all parts of the teacher pipeline equip teachers to take diagnostic test scores to elevate learning and areas of focus?
3. What assessments are currently being used in districts?
4. Why are we waiting to determine that a student is struggling?
5. Do we have the right assessments? How important are these assessments?
6. Why isn't assessment used to measure what students have?

3.2 | What specific ways can assessment-informed instruction be designed to better respond to students' needs and promote deeper, more rapid learning?

Similar to responses from the previous Discussion Question, Discussion Question 3.2 also had a breadth of responses from participants surrounding assessments, but also included topics such as community/parental involvement, curriculum, educator preparation, pedagogy, professional learning, and others. A full codebook for this question can be found in Appendix Table B8.

Assessment.
Tables discussed assessment approaches, items, types, utility, equity considerations and more.

Assessment approaches discussed included the use of conversational or oral assessments and having students show their work and justify their answer to demonstrate their strategies. State assessments are electronic, which makes it difficult for students to show their work or get credit for their process. It prioritizes one right answer.

Participants discussed assessment items in two ways. The first was the need to ensure the norm-referenced assessment the state uses is reliable and valid (i.e., item analysis needed). The second was if assessments should include multiple choice responses, suggesting that the test does not fully capture students' math practices or knowledge but instead prioritizes reading, writing, and technology skills.

Assessment types discussed by participants included the need to shift from pre-testing to foundational skills assessments to then guide subsequent instruction and for assessments to build on what students already know.

With regards to assessment utility and administration, tables remarked on the timeliness (or lack thereof) of results to be meaningfully used, the need for assessments to happen more often, and the belief that teachers and administrators are stretched too thin to fully digest assessment data. Participants also noted a lack of clear understanding of the purpose of some assessments since they only show the students' learning for one day and not their entire journey.

Discussions surrounding assessment data driving instruction were held at most tables and included strategic planning from teachers based on assessment data, holding weekly data analysis meetings, and being thoughtful in using assessment data and instruction.

For district and local assessment use, participants voiced the need for assessments aligned with learning standards, cross-school collaboration, and sharing resources on assessments. The NWEA MAP assessment was noted here as it was previously, however this time participants noted the assessment (and assessments like it) cause disruptions to learning.

Two tables explicitly noted equity considerations when it comes to assessment. Both noted that multilingual learners and students with disabilities may need more support both for time and assistance in completing assessments that should be factored into planning and administering assessments. Moreover, it was noted that assessments are sometimes skewed against specific groups of students because of their life experiences, and assessments should be analyzed for such biases.

Discussions surrounding grading practices came up at a few tables with one wondering whether or not teachers know how to give feedback on work. Another table had an open discussion around standards-based grading compared to traditional letter grades.

Community/parental involvement.
Participants see the need to do serious patch work to educate new teachers and parents about math instruction. Maintaining constant communication with parents is necessary so they can understand what the curriculum is and how it is being used.

Curriculum.
Participants called for a study on which districts are using which curriculum and on how performance on assessments differs by curriculum used. Tables also voiced the need for standard unpacking and mapping for each unit between content practices and teaching practices.

Educator preparation.
Tables discussed the need for EPPs to teach pre-service teachers math PCK.

General.
Participants made note of differences in the Achieve the Core document for elementary and high schools and wondered how teachers are going to engage with the curriculum differently. As in other Discussion Questions above, the idea of math anxiety or not being a math person was mentioned by tables again here, with the need for teachers to address the issue before transferring their math anxiety to students, other teachers, or administrators.

Pedagogy.
Participants emphasized the importance of providing students with the opportunity to solve problems on their own, letting them struggle if needed, without saving them. Class size was also discussed in that smaller classes help with instruction particularly for behavioral management.

Professional learning.
Tables thought professional learning and communication between districts and higher education needs to be improved, and ISBE should be the one to help with these relationships. On a different note, participants believed instructional coaches are stretched thin and may not be able to support in all the ways that are needed.

School/district operations/culture.
Two main concerns were raised by tables: (1) state reports require more interventions, but if support staff are lacking, these state mandates require district-level support and (2) teachers in under-supported systems are disadvantaged as opposed to teachers with strong support systems in their districts. Possible solutions posed included early release days being used for professional learning, offering more structure in a math block, and organizing time for teachers within their blocks.

Student attitudes.
One table noted that students need to know their thinking is validated, so as to help them gain confidence in their abilities and change their negative mindsets about math.

Teacher attitudes.
Participants remarked that teachers need to address their own math-related insecurities because it affects the way they speak and think about themselves and math.

Teacher workload/responsibilities.
Participants noted that teachers are stretched thin. Teachers lack time for planning and analyzing assessment data which furthers issues. Other notes include that teachers carry a heavy burden and teachers who are not formally trained may not fully understand the assessments or standards needing to be taught.

Questions from participants in response to this Discussion Question included:

1. Can we start testing at the beginning of the year?
2. How can professional development and communication between districts and higher education be elevated?
3. What are the norming standards the state is using?

Conclusion

This section provides nuanced descriptions of conversations held for each Discussion Question. The details of these conversations are important. However, across Discussion Questions, several ideas commonly emerged:

- **Vision.** Participants sought a shared statewide vision and language around the goals and principles of mathematics instruction.

- **Ideal mathematics teaching and learning.** Participants frequently shared ideas that hinted at their views of what that vision should be. They described classrooms that centered problem solving over rote memorization, concepts over procedures, and classroom discussion. They sought assessments aligned to that vision, with fewer multiple-choice questions and more problem-solving.

- **Vertical planning.** Participants expressed that teachers and administrators lack understanding of the mathematical skills and concepts that come before and after a specific grade, and that more vertical planning across grade levels is needed.

- **Curriculum rollout.** Participants noted frustrations not with curriculum in and of itself, but with curriculum rollout and implementation in districts. They felt that professional learning and common vision were often lacking in these rollouts, as well as evaluation of teachers' fidelity of implementation of new curriculum.

- **Parent education.** Participants felt that parent knowledge of mathematics, especially new ways of teaching mathematics, could be a barrier to instructional change and student learning. They sought new ways of involving and educating parents regarding mathematics.

- **Teacher learning.** Participants spoke at length about the importance of educator preparation and ongoing training. They felt that teachers needed more training on pedagogical content knowledge (PCK) in mathematics throughout the trajectory of professional learning, from pre-service to in-service. They questioned whether appropriate structures were in place to support in-service professional learning; they wanted more time for such learning and more mentorship, coaching, regional support hubs, or "paired teacher" structures that promote observation of "best practice" and support for improvement of practice. Finally, they felt administrators need professional learning as well to be able to evaluate teachers' practices in mathematics and to identify high-quality supports.

- **Assessment use.** Participants wanted guidance and potential changes related to mathematics assessment in order to use data more meaningfully, noting challenges related to different assessment types (e.g., formative, summative, local/district/state) and utility of assessment administration (e.g., state assessments come too late for teachers to use).

Appendix A. Needs Assessment Detail

Teacher survey disaggregated analysis

Survey data quality summary.
Out of a total of 30 survey items, the overall quality of the response data is strong. The mean item-level missing rate is 2.52%, and the median missing rate is 1.6%, indicating that most questions were answered by the majority of respondents. Nearly all items had missing rates below 10%.

One open-ended question, “What else would you like us to consider for mathematics guidance in Illinois?”, had the highest rate of nonresponse. Only 35% of teachers entered a response to this item.

Two rank-order questions had notably higher missing rates compared to the rest of the survey. The question “What teaching methods do you primarily utilize when teaching mathematics…?” had a missing rate of 15.2%, and the question “Please rank the strategies and resources below from most helpful to least helpful in increasing parent and community involvement…” had a missing rate of 13.9%.

Aside from these items, all other questions had missing rates below 10%, suggesting a high level of overall engagement with the survey.

Results by teacher endorsement status.
Respondents who did not specify their endorsement were excluded (n = 55 responses were excluded)

Professional Educator License (PEL) with a mathematics endorsement (n = 1159)
No mathematics endorsement but assigned to teach mathematics (n = 1102)

1. Please describe your level of engagement in professional learning related to the curriculum you implement. I have participated in curriculum-specific professional learning…

Engagement in curriculum-specific PD	PEL with Math Endorsement	Without a Mathematics Endorsement
Often (two or three professional learning opportunities in the current school year)	386 (33.5%)	321 (29.4%)
Frequently (four or more professional learning opportunities in the current school year)	345 (29.9%)	315 (28.9%)
Annually (one professional learning opportunity)	280 (24.3%)	308 (28.3%)
Never (no professional learning opportunities this school year)	141 (12.2%)	146 (13.4%)

The majority of teachers, regardless of endorsement status, have participated in curriculum-specific professional learning at least once this year. Teachers with endorsements show slightly higher engagement overall. However, a notable part of both groups reported **Never** having curriculum-specific PD this year.

2. Please describe your level of engagement in professional learning related to the curriculum you implement. To what degree do you feel you are aware of and have access to district/school funding and resources...

Awareness and access to district/school funding and resources	PEL with Math Endorsement	Without a Mathematics Endorsement
Some degree (Funding for professional learning support in math is limited.)	405 (35.4%)	346 (31.8%)
Great degree (My district/school supports my professional learning in math financially.)	355 (31.0%)	329 (30.2%)
Neutral (Professional learning funding is available, but very limited and requires, for instance, an application.)	307 (26.8%)	306 (28.1%)
None (District/school funding is not available.)	77 (6.7%)	107 (9.8%)

Teachers with a PEL and math endorsement reported slightly higher engagement in curriculum-related professional learning and somewhat greater access to district or school funding and resources compared to those without a mathematics endorsement.

3. How do you perceive students' attitudes toward math overall in your classroom?

Perceived students' attitudes toward math	PEL with Math Endorsement	Without a Mathematics Endorsement
Very Positive: Students show a high level of enthusiasm and interest in math; they are eager to participate and enjoy the challenges it presents.	58 (5.0%)	136 (12.4%)
Positive: Students generally enjoy math and participate actively, but they may be less enthusiastic about certain concepts or topics	307 (26.5%)	425 (38.6%)
Mixed: Some students are enthusiastic and motivated, while others express frustration or disinterest; the overall attitude varies significantly across the class.	531 (45.9%)	358 (32.5%)

Neutral: Students show little emotional response to math; they don't express strong opinions either way, and their engagement varies.	83 (7.2%)	66 (6.0%)
Negative: Students often express frustration, anxiety, or disinterest in math, and they tend to avoid participation or struggle with motivation.	117 (10.1%)	61 (5.5%)
Very Negative: Students show a strong dislike or fear of math, often expressing negative attitudes or resistance, and rarely engage in the material.	30 (2.6%)	21 (1.9%)
Not Sure: I do not have a clear sense of how students feel about math, as they do not openly express their attitudes or feelings.	2 (0.2%)	3 (0.3%)
Does Not Apply: I do not have my own classroom based on my role.	30 (2.6%)	30 (2.7%)

Teachers without a math endorsement more frequently reported positive and very positive attitudes from students, and they reported negative or very negative attitudes less frequently compared with teachers with a math endorsement. Those with a math endorsement were more likely to report mixed or negative attitudes from students.

4. Based on your response to the previous question regarding students' attitudes toward math, what would you characterize as the primary drivers affecting students' attitudes?

Primary drivers affecting students' attitudes	PEL with Math Endorsement	Without a Mathematics Endorsement
Student mindset, self-confidence, and perceived ability in math	527 (46.9%)	351 (32.9%)
Teaching and curriculum delivery methods that are utilized	170 (15.1%)	208 (19.5%)
Classroom dynamics (e.g., behavioral or social interactions, interpersonal relationships, non-typical class or cohort composition)	93 (8.3%)	155 (14.5%)
Parental or family factors (e.g., support or encouragement, attitudes, and beliefs)	93 (8.3%)	40 (3.7%)
Teacher-student relationships	79 (7.0%)	96 (9.0%)
Other	66 (5.9%)	51 (4.8%)
Curriculum resources (in relation to engagement, relevance, cultural responsiveness)	53 (4.7%)	132 (12.4%)

Socioeconomic factors or other external pressures	31 (2.8%)	25 (2.3%)
Peer relationships	9 (0.8%)	8 (0.7%)

Student mindset, self-confidence, and perceived ability in math were most commonly cited as the primary influences on students' attitudes. Teachers also pointed to teaching methods, classroom dynamics, curriculum resources, and family factors as contributing drivers, with some variation in emphasis between those two groups. Teachers without math endorsements emphasized classroom-level (or school level) factors more strongly, particularly teaching and curriculum methods (19.5%) and classroom dynamics (14.5%) compared to endorsed teachers (15.1% and 8.3%, respectively).

5. Rate your satisfaction with the curriculum currently being used in your classroom.

Curriculum currently being used satisfaction	PEL with Math Endorsement	Without a Mathematics Endorsement
Satisfied	360 (31.2%)	308 (28.1%)
Somewhat satisfied	380 (33.0%)	342 (31.1%)
Neutral	166 (14.4%)	186 (16.9%)
Somewhat dissatisfied	146 (12.7%)	156 (14.2%)
Dissatisfied	101 (8.8%)	106 (9.7%)

Teachers most commonly reported being somewhat satisfied or satisfied with their current curriculum, regardless of endorsement status. Overall, satisfaction levels leaned moderately positive, with a notable portion of teachers expressing either neutrality or dissatisfaction.

6. Do students in your school or classroom have access to the curriculum resources they need to succeed in math based upon readiness, interest, and learning profile?

Access to Curriculum Resources	PEL with Math Endorsement	Without a Mathematics Endorsement
Yes, all students have access	894 (78.6%)	853 (78.7%)
No, there are disparities in access to resources	244 (21.4%)	231 (21.3%)

Most teachers, regardless of endorsement status, reported that all students have access to the curriculum resources they need. However, about one in five noted disparities, indicating that gaps in equitable resource access persist across both groups.

7. In the previous question, you indicated there are disparities in access to resources. What do you observe as the disparities?

Observed Disparities in Access to Resources	PEL with Math Endorsement	Without a Mathematics Endorsement
Quality instructional materials	60 (24.9%)	54 (23.9%)
Access to high-quality instruction/ teacher training	44 (18.3%)	45 (19.9%)
Access to advanced coursework	39 (16.2%)	34 (15.0%)
Technology access	38 (15.8%)	25 (11.1%)
Other	31 (12.9%)	39 (17.3%)
Funding inequities	27 (11.2%)	29 (12.8%)

Among teachers who reported disparities in access to math resources, the most commonly observed issue in both groups was quality instructional materials. Other frequently noted disparities included access to high-quality instruction or teacher training, advanced coursework, and technology. Teachers without an endorsement more frequently selected “Other” or noted funding inequities. Overall, responses point to both material and instructional gaps affecting equitable student access.

8. State assessments for K–8 students provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of State Assessments for K-8	PEL with Math Endorsement	Without a Mathematics Endorsement
Strongly Agree	25 (2.3%)	43 (4.1%)
Agree	251 (22.6%)	330 (31.1%)
Disagree	301 (27.1%)	327 (30.8%)
Strongly Disagree	295 (26.6%)	268 (25.3%)
N/A	239 (21.5%)	93 (8.8%)

Most teachers, regardless of endorsement, expressed skepticism that K–8 state assessments provide sufficient information to make sound instructional decisions. Notably, teachers with a math endorsement were more likely to select "N/A," possibly because they are secondary teachers in untested grades (9, 10, or 12).

9. District assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of District Assessments	PEL with Math Endorsement	Without a Mathematics Endorsement
Strongly Agree	150 (13.5%)	121 (11.4%)
Agree	591 (53.1%)	603 (56.9%)
Disagree	238 (21.4%)	230 (21.7%)
Strongly Disagree	90 (8.1%)	63 (5.9%)
N/A	44 (4.0%)	43 (4.1%)

A clear majority of teachers in both groups agree or strongly agree that district assessments deliver sufficient instructional information. Roughly one-quarter remain unconvinced, and only a small fraction select "N/A," indicating broad confidence in district-level assessment data.

10. Local district/school assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of Local Assessments	PEL with Math Endorsement	Without a Mathematics Endorsement
Strongly Agree	287 (25.8%)	196 (18.5%)
Agree	564 (50.8%)	598 (56.5%)
Disagree	133 (12.0%)	132 (12.5%)
Strongly Disagree	43 (3.9%)	37 (3.5%)
N/A	84 (7.6%)	96 (9.1%)

Overall, local assessments received the most positive perception compared to state and district assessments. Most teachers agreed that local assessments provide sufficient information to make sound instructional decisions, with over 75% agreement in both groups. Endorsed teachers reported slightly higher rates of strong agreement, while non-endorsed teachers had a higher proportion of "N/A" responses.

11. Please rank the strategies and resources below from most helpful to least helpful in increasing parent and community involvement in supporting students' math learning.

Strategy/ Resource	Rank (Mean Rank) - PEL with Endorsement (n=1,048)	Rank (Mean Rank) - Without Endorsement (n=923)
Regular communication about student progress	1st (1.65)	1st (1.66)
Online resources for parents	2nd (2.49)	2nd (2.83)
Math workshops for parents	3rd (3.39)	4th (3.28)
Family math nights	4th (3.65)	3rd (3.11)
Community partnerships	5th (3.83)	5th (4.12)

Teachers from both credential groups ranked regular communication about student progress as the most helpful strategy for increasing parent and community involvement in math learning. This was followed by online resources for parents. Differences appeared further down the list: teachers with a math endorsement placed math workshops ahead of family math nights, while those without an endorsement slightly preferred family math nights. Community partnerships were ranked lowest by both groups.

12. What teaching methods do you primarily utilize when teaching mathematics? Use the arrows to the right of each statement to move the most frequently utilized methods to the top and least at the bottom.

Teaching Method	Rank (Mean Rank) Mean Rank - PEL with Endorsement (n=1,016)	Rank (Mean Rank) Mean Rank - Without Endorsement (n=922)
Direct Instruction	1st (2.01)	1st (1.79)
Collaborative Learning	2nd (2.27)	2nd (2.55)
Conceptual Teaching	3rd (3.58)	4th (4.18)
Inquiry-Based Learning	4th (4.23)	5th (4.42)

Mastery-Based Learning	5th (4.98)	6th (5.03)
Game-Based Learning	6th (5.17)	3rd (4.15)
Project-Based Learning	7th (5.76)	7th (5.88)

Both groups of teachers ranked Direct Instruction and Collaborative Learning as their most frequently used teaching methods in math classrooms. Teachers with a math endorsement also favored Conceptual Teaching, while those without showed relatively higher use of Game-Based Learning. Across both groups, Project-Based Learning and Mastery-Based Learning were among the least utilized strategies.

13. What type of support or professional learning would help you feel more confident and prepared to teach math?

Support Type	PEL with Math Endorsement (N = 1159)	Without a Mathematics Endorsement (N= 1102)
Curriculum implementation (e.g., use of classroom technology; differentiation of instruction based upon student interest, learning profile, readiness level, interdisciplinary/ cross-curricular connections.)	656 (57%)	624 (57%)
Pedagogical content knowledge (evidence-based math practices)	436 (38%)	493 (45%)
Assessments (development, administration, data use)	377 (33%)	376 (34%)
General content knowledge	118 (10%)	220 (20%)
None - no current professional learning needs	287 (25%)	196 (18%)
Other	84 (7%)	66 (6%)
Classroom management	2 (<1%)	0 (0.0%)

The most commonly selected support by both groups of teachers was curriculum implementation. Teachers without a math endorsement more frequently selected pedagogical content knowledge and general content knowledge, while those with a math endorsement were more likely to indicate no current need for additional professional learning. Support for assessments was similarly viewed across both groups.

14. In what ways does your school or district support students from underrepresented groups in math, such as multilingual learners, advanced learners, or learners with specialized needs?

Support Type	PEL with Math Endorsement (N = 1159)	Without a Mathematics Endorsement (N= 1102)
Targeted interventions and accommodations	909 (78%)	857 (78%)
Advanced math opportunities and enrichment programs	567 (49%)	342 (31%)
Bilingual or culturally relevant resources	436 (38%)	316 (29%)
No specific support provided	128 (11%)	179 (16%)

The most commonly reported support across both groups of teachers was targeted interventions and accommodations. Notably, a higher percentage of non-endorsed teachers indicated that No specific support is provided, suggesting variability in perceived or actual support.

15. What specific aspects of the curriculum contribute to your dissatisfaction?

Dissatisfaction Aspect	PEL with Math Endorsement (N = 1159)	Without a Mathematics Endorsement (N= 1102)
Level of support for diverse learners	559 (48%)	549 (50%)
Flexibility to adapt to student needs	501 (43%)	490 (45%)
Engagement and relevance for students	471 (41%)	471 (43%)
Clarity of the learning progression	310 (27%)	333 (30%)
Availability of resources and materials	292 (25%)	251 (23%)
Inclusion of formative and summative assessments	180 (16%)	186 (17%)
Other	145 (13%)	156 (14%)
Alignment with learning standards	57 (5%)	74 (7%)
None/ none/ N/A/ lack of rigor	18 (2%)	16 (2%)

For those teachers who cited dissatisfaction with the curriculum, both groups of teachers reported similar sources of dissatisfaction. The most common concerns included the level of support for diverse learners, flexibility to adapt to student needs, and engagement and relevance for student.

Years of teaching experience.

Respondents who did not specify their years of teaching experience were excluded (n = 28 responses were excluded)

Teachers with six or more years of teaching experience (n = 2067)
Teachers with five or less years of teaching experience (n = 330)

1. Please describe your level of engagement in professional learning related to the curriculum you implement. I have participated in curriculum-specific professional learning...

Engagement in curriculum-specific PD	Less than 6 years	More than 6 years
Annually (once)	67 (22.7%)	544 (26.5%)
Frequently (4+ times)	90 (30.5%)	609 (29.6%)
Never	50 (16.9%)	247 (12.0%)
Often (2-3 times)	88 (29.8%)	654 (31.8%)

The majority of teachers, regardless of endorsement status, have participated in curriculum-specific professional learning. Teachers with more than six years of experience reported higher overall participation in curriculum-specific professional learning, with nearly one-third engaging frequently and another third engaging often. Teachers with less than six years of experience showed a similar distribution, though slightly more reported never participating. Overall, both experience groups reflected consistent engagement patterns, with the majority participating in at least one PD opportunity.

2. Please describe your level of engagement in professional learning related to the curriculum you implement. To what degree do you feel you are aware of and have access to district/school funding and resources?

Awareness and access to district/school funding and resources	Less than 6 years	More than 6 years
Some degree (Funding for professional learning support in math is limited.)	109 (36.7%)	683 (33.5%)
Great degree (My district/school supports my professional learning in math financially.)	85 (28.6%)	602 (29.5%)

Neutral (Professional learning funding is available, but very limited and requires, for instance, an application.)	67 (22.6%)	597 (29.3%)
None (District/school funding is not available.)	36 (12.1%)	156 (7.7%)

Teachers with both fewer and more than six years of experience reported similar levels of access to funding for math-related professional learning. The most common response for both groups was “some degree” of funding support. Slightly more experienced teachers selected “great degree”. However, newer teachers were nearly 1.5 times as likely to report no access to funding, highlighting a possible gap in support for novice teachers.

3. How do you perceive students’ attitudes toward math overall in your classroom

Perceived students’ attitudes toward math	Less than 6 years	More than 6 years
Very Positive: Students show a high level of enthusiasm and interest in math; they are eager to participate and enjoy the challenges it presents.	18 (6.0%)	183 (8.9%)
Positive: Students generally enjoy math and participate actively, but they may be less enthusiastic about certain concepts or topics.	95 (31.7%)	666 (32.2%)
Mixed: Some students are enthusiastic and motivated, while others express frustration or disinterest; the overall attitude varies significantly across the class.	118 (39.3%)	815 (39.4%)
Neutral: Students show little emotional response to math; they don’t express strong opinions either way, and their engagement varies.	25 (8.3%)	130 (6.3%)
Negative: Students often express frustration, anxiety, or disinterest in math, and they tend to avoid participation struggle with motivation.	29 (9.7%)	165 (8.0%)
Very Negative: Students show a strong dislike or fear of math, often expressing negative attitudes or resistance, and rarely engage in the material.	7 (2.3%)	47 (2.3%)
Not Sure: I do not have a clear sense of how students feel about math, as they do not openly express their attitudes or feelings	-	4 (0.2%)
Does Not Apply: I do not have my own classroom based on my role.	7 (2.3%)	56 (2.7%)

Across both experience bands, the most common perception was “Mixed” attitudes by roughly four in ten teachers. Regardless of their experience, they see a classroom split between enthusiasm and frustration. Teachers with more than six years of experience reported slightly higher rates of Positive and Very Positive attitudes, while early-career teachers observed marginally more Negative sentiment. Reports of Very Negative, Does Not Apply, or Not Sure were low in both groups, indicating that most teachers feel able to read their students’ feelings about math.

4. Based on your response to the previous question regarding students’ attitudes toward math, what would you characterize as the primary drivers affecting students’ attitudes?

Primary drivers affecting students’ attitudes	Less than 6 years	More than 6 years
Student mindset, self-confidence, and perceived ability in math	129 (44.5%)	798 (39.8%)
Teaching and curriculum delivery methods that are utilized	40 (13.8%)	347 (17.3%)
Classroom dynamics (e.g. behavioral or social interactions, interpersonal relationships, non-typical class or cohort composition)	31 (10.7%)	229 (11.4%)
Parental or family factors (e.g., support or encouragement, attitudes, and beliefs)	15 (5.2%)	123 (6.1%)
Teacher-student relationships	18 (6.2%)	170 (8.5%)
Other	15 (5.2%)	106 (5.3%)
Curriculum resources (in relation to engagement, relevance, cultural responsiveness)	36 (12.4%)	155 (7.7%)
Socioeconomic factors or other external pressures	3 (1.0%)	57 (2.8%)
Peer relationships	3 (1.0%)	16 (0.8%)

Teachers with less than 6 years and more than 6 years of experience largely agreed that the primary driver of students’ attitudes toward math is student mindset, self-confidence, and perceived ability. Novice teachers more frequently cited curriculum resources and less frequently cited teaching/ curriculum delivery methods as compared with teachers with more than 6 years of experience.

5. Rate your satisfaction with the curriculum currently being used in your classroom

Curriculum currently being used satisfaction	Less than 6 years	More than 6 years
Satisfied	78 (26.1%)	615 (29.9%)
Somewhat satisfied	88 (29.4%)	663 (32.2%)
Neutral	64 (21.4%)	315 (15.3%)
Somewhat dissatisfied	46 (15.4%)	269 (13.1%)
Dissatisfied	23 (7.7%)	194 (9.4%)

Roughly three in five teachers, regardless of experience, reported being either satisfied or somewhat satisfied with their current curriculum.

6. Do students in your school or classroom have access to the curriculum resources they need to succeed in math based upon readiness, interest, and learning profile?

Access to Curriculum Resources	Less than 6 years	More than 6 years
Yes, all students have access	228 (77.8%)	1594 (78.6%)
No, there are disparities in access to resources	65 (22.2%)	434 (21.4%)

Most teachers in both experience groups reported that all students have access to the curriculum resources needed to succeed in math.

7. In the previous question, you indicated there are disparities in access to resources. What do you observe as the disparities?

Observed Disparities in Access to Resources	Less than 6 years	More than 6 years
Quality instructional materials	18 (28.1%)	103 (24.2%)
Access to high-quality instruction/teacher training	14 (21.9%)	76 (17.8%)
Access to advanced coursework	10 (15.6%)	66 (15.5%)
Technology access	14 (21.9%)	54 (12.7%)
Other	4 (6.2%)	68 (16.0%)
Funding inequities	4 (6.2%)	55 (12.9%)

Among teachers who reported disparities in access to math resources, early-career teachers emphasized technology access and instructional materials. Experienced teachers reported a broader spread, with notable mentions of funding inequities and advanced coursework.

8. State assessments for K–8 students provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of State Assessments for K-8	Less than 6 years	More than 6 years
Strongly Agree	14 (4.9%)	58 (2.9%)
Agree	105 (37.0%)	502 (25.3%)
Disagree	75 (26.4%)	577 (29.1%)
Strongly Disagree	54 (19.0%)	531 (26.8%)
N/A	36 (12.7%)	315 (15.9%)

The majority of teachers, especially those with more than six years of experience, believe K-8 state assessments do not give enough information for sound instructional decisions (56% of veteran teachers vs. 45% of early-career teachers select Disagree or Strongly Disagree).

9. District assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of District Assessments	Less than 6 years	More than 6 years
Strongly Agree	30 (10.6%)	255 (12.8%)
Agree	167 (59.0%)	1079 (54.3%)
Disagree	48 (17.0%)	439 (22.1%)
Strongly Disagree	18 (6.4%)	143 (7.2%)
N/A	20 (7.1%)	70 (3.5%)

Most teachers in both groups felt that district assessments provide adequate information to support instructional decisions, with around 70% agreement across both groups. However, about 29% of veteran teachers still expressed some level of disagreement.

10. Local district/school assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of Local Assessments	Less than 6 years	More than 6 years
Strongly Agree	49 (17.4%)	457 (23.1%)
Agree	161 (57.1%)	1050 (53.0%)
Disagree	34 (12.1%)	241 (12.2%)
Strongly Disagree	11 (3.9%)	77 (3.9%)
N/A	27 (9.6%)	157 (7.9%)

Teachers across experience levels generally viewed local assessments as informative, with over 70% in both groups agreeing or/and strongly agreeing they support sound instructional decisions.

11. Please rank the strategies and resources below from most helpful to least helpful in increasing parent and community involvement in supporting students' math learning.

Strategy / Resource	Rank (Mean Rank) Mean Rank - Less than 6 years (n = 245)	Rank (Mean Rank) Mean Rank - More than 6 years (n = 1,810)
Regular communication about student progress	1st (1.69)	1st (1.64)
Online resources for parents	2nd (2.59)	2nd (2.66)
Math workshops for parents	3rd (3.36)	3rd (3.34)
Family math nights	4th (3.42)	4th (3.39)
Community partnerships	5th (3.95)	5th (3.97)

Both early-career and veteran teachers rank regular communication about student progress as the most helpful way to boost parent and community involvement in math learning, followed by online resources for parents. At the other end of the list, community partnerships consistently receive the lowest ranking across both groups.

12. What teaching methods do you primarily utilize when teaching mathematics? Use the arrows to the right of each statement to move the most frequently utilized methods to the top and least at the bottom.

Teaching Method	Rank (Mean Rank) Mean Rank - Less than 6 years (n = 256)	Rank (Mean Rank) Mean Rank - More than 6 years (n = 1,769)
Direct Instruction	1st (1.65)	1st (1.94)
Collaborative Learning	2nd (2.61)	2nd (2.38)
Conceptual Teaching	3rd (4.3)	3rd (3.84)
Inquiry-Based Learning	4th (4.32)	4th (4.31)
Game-Based Learning	5th (4.5)	5th (4.72)
Mastery-Based Learning	6th (4.91)	6th (5.0)
Project-Based Learning	7th (5.72)	7th (5.81)

Teachers across both experience levels most frequently use Direct Instruction and Collaborative Learning in their math classrooms. Both groups of teachers rank Project-Based Learning as the least used.

13. What type of support or professional learning would help you feel more confident and prepared to teach math?

Support Type	Less than 6 years (N = 300)	More than 6 years (N = 2067)
Curriculum implementation (e.g., use of classroom technology; differentiation of instruction based upon student interest, learning profile, readiness level, interdisciplinary/ cross-curricular connections).	208 (69%)	1124 (54%)
Pedagogical content knowledge (evidence-based math practices)	145 (48%)	819 (40%)
Assessments (development, administration, data use)	105 (35%)	682 (33%)
General content knowledge	77 (26%)	281 (14%)
None - no current PL need	28 (9%)	479 (23%)
Other	16 (5%)	142 (7%)

Across both experience groups, teachers most frequently cited support in curriculum implementation and differentiation of instruction. Both groups next prioritized pedagogical content knowledge. A sizable veteran teacher population also indicated no additional professional-learning needs.

14. In what ways does your school or district support students from underrepresented groups in math, such as multilingual learners, advanced learners, or learners with specialized needs?

Support Type	Less than 6 years (N = 300)	More than 6 years (N = 2067)
Targeted interventions and accommodations	240 (80%)	1605 (78%)
Advanced math opportunities and enrichment programs	108 (36%)	844 (41%)
Bilingual or culturally relevant resources	93 (31%)	693 (34%)
No specific support provided	35 (12%)	280 (14%)

In both experience groups, the predominant supports for underrepresented math learners are targeted interventions and accommodations followed by advanced math opportunities and bilingual or culturally relevant resources.

15. What specific aspects of the curriculum contribute to your dissatisfaction?

Dissatisfaction Aspect	Less than 6 years (N = 300)	More than 6 years (N = 2067)
Level of support for diverse learners	151 (50%)	1005 (49%)
Flexibility to adapt to student needs	142 (47%)	891 (43%)
Engagement and relevance for students	140 (47%)	855 (41%)
Clarity of the learning progression	102 (34%)	563 (27%)
Availability of resources and materials	71 (24%)	498 (24%)
Inclusion of formative and summative assessments	55 (18%)	327 (16%)
Other	28 (9%)	279 (14%)
Alignment with learning standards	16 (5%)	120 (6%)
None / N/A / other minor	2 (<1%)	36 (<2%)

For those who were dissatisfied with their curriculum, both groups of teachers pinpointed the same top three sources of dissatisfaction: (lack of) support for diverse learners, flexibility to meet student needs, and engagement/relevance, roughly accounting for 40% to 50% of selections in each teacher group. Concerns about clarity of progression and availability of resources follow, while issues such as alignment to standards or a complete lack of dissatisfaction are relatively low.

Teacher grade band.

In this survey, teachers were asked to indicate all grade bands they have taught in the past, which means responses are not mutually exclusive (i.e., a single teacher may be counted in more than one grade band). As a result, the totals exceed 100% due to overlapping responses. This approach allows us to capture the full range of teaching experience across grade levels, but when disaggregating data by grade band, it introduces complex combinations that may dilute clear patterns or trends. To maintain clarity and focus in the analysis, we highlight broad grade bands rather than attempt to analyze every possible combination.

Here is the distribution of responses by grade band taught:

- Grades 3–5: 1,059 teachers (32.2%)
- Grades 6–8: 802 teachers (24.4%)
- Grades 9–12: 597 teachers (18.1%)
- Grades PK–2: 835 teachers (25.4%)

1. Please describe your level of engagement in professional learning related to the curriculum you implement. I have participated in curriculum-specific professional learning...

Engagement in curriculum-specific PD	PK-2	3-5	6-8	9-12
Frequently (4 + per year)	258 (31.3%)	332 (31.7%)	247 (31.1%)	167 (28.3%)
Often (2 - 3 per year)	259 (31.5%)	306 (29.3%)	257 (32.4%)	190 (32.2%)
Annually (1 per year)	210 (25.5%)	272 (26.0%)	182 (22.9%)	151 (25.6%)
Never	96 (11.7%)	136 (13.0%)	108 (13.6%)	82 (13.9%)

Across all grade bands, a majority of teachers reported participating in curriculum-specific professional learning at least two times per year.

2. Please describe your level of engagement in professional learning related to the curriculum you implement. To what degree do you feel you are aware of and have access to district/school funding and resources...

Awareness and access to district/school funding and resources	PK-2	3-5	6-8	9-12
Great degree	236 (28.8%)	312 (30.0%)	233 (29.5%)	174 (29.7%)
Some degree	271 (33.1%)	356 (34.2%)	276 (34.9%)	217 (37.0%)
Neutral	231 (28.2%)	290 (27.9%)	228 (28.9%)	158 (27.0%)
None	81 (9.9%)	83 (8.0%)	53 (6.7%)	37 (6.3%)

Awareness and access to district/school funding and resources were relatively consistent across grade bands. Notably, the proportion of respondents reporting “None” decreased progressively from PK-2 (9.9%) to secondary (6.3%), suggesting slightly improved access or awareness at higher grade levels.

3. How do you perceive students’ attitudes toward math overall in your classroom

Perceived students’ attitudes toward math	PK-2	3-5	6-8	9-12
Very Positive	124 (14.9%)	99 (9.4%)	36 (4.5%)	16 (2.7%)
Positive	336 (40.5%)	387 (36.7%)	202 (25.3%)	103 (17.4%)
Mixed	226 (27.2%)	386 (36.6%)	369 (46.2%)	296 (50.1%)
Neutral	44 (5.3%)	57 (5.4%)	49 (6.1%)	54 (9.1%)
Negative	46 (5.5%)	63 (6.0%)	83 (10.4%)	78 (13.2%)
Very Negative	11 (1.3%)	20 (1.9%)	24 (3.0%)	24 (4.1%)
Not Sure	4 (0.5%)	3 (0.3%)	2 (0.3%)	4 (0.7%)
Does Not Apply*	39 (4.7%)	40 (3.8%)	33 (4.1%)	16 (2.7%)

*Respondents who indicated they do not have their own classroom.

Teachers' perceptions of student attitudes toward math tend to become less positive as grade level increases. While over half of PK–2 students are seen as having positive or very positive attitudes, this proportion declines sharply by high school, where mixed and negative attitudes are more common. Severe aversion (very negative) remains relatively low (approx. 1–4%) across all grade bands but doubles from lower elementary to secondary levels.

4. Based on your response to the previous question regarding students' attitudes toward math, what would you characterize as the primary drivers affecting students' attitudes?

Primary drivers affecting students' attitudes	PK-2	3-5	6-8	9-12
Student mindset, self-confidence, and perceived ability in math	232 (29.5%)	385 (38.0%)	350 (45.9%)	280 (48.9%)
Teaching and curriculum delivery methods that are utilized	189 (24.0%)	196 (19.3%)	108 (14.2%)	61 (10.6%)
Classroom dynamics	101 (12.8%)	126 (12.4%)	89 (11.7%)	53 (9.2%)
Curriculum resources	100 (12.7%)	101 (10.0%)	32 (4.2%)	17 (3.0%)
Teacher-student relationships	62 (7.9%)	85 (8.4%)	58 (7.6%)	40 (7.0%)
Other	40 (5.1%)	52 (5.1%)	46 (6.0%)	38 (6.6%)
Parental or family factors	38 (4.8%)	45 (4.4%)	56 (7.3%)	48 (8.4%)
Socioeconomic factors or other external pressures	16 (2.0%)	19 (1.9%)	14 (1.8%)	27 (4.7%)
Peer relationships	7 (0.9%)	5 (0.5%)	9 (1.2%)	7 (1.2%)

Across all grade bands, teachers most frequently identified student mindset, self-confidence, and perceived ability in math as the primary driver influencing students' attitudes toward the subject. This factor was consistently the most cited, particularly in grades 3-5, 6-8 and secondary. In early grades (PK-2), teaching and curriculum delivery, classroom dynamics, and curriculum resources were also commonly noted, though their prominence declined in higher grades. In secondary, external influences, including parental involvement, and socioeconomic factors, became more salient.

5. Rate your satisfaction with the curriculum currently being used in your classroom

Curriculum currently being used satisfaction	PK-2	3-5	6-8	9-12
Satisfied	248 (30.1%)	320 (30.4%)	230 (29.0%)	169 (28.7%)
Somewhat satisfied	250 (30.3%)	334 (31.8%)	259 (32.6%)	184 (31.3%)
Neutral	132 (16.0%)	162 (15.4%)	125 (15.7%)	99 (16.8%)
Somewhat dissatisfied	109 (13.2%)	141 (13.4%)	112 (14.1%)	78 (13.3%)
Dissatisfied	85 (10.3%)	94 (8.9%)	68 (8.6%)	58 (9.9%)

Across all grade bands, over 60% of teachers reported being somewhat satisfied or satisfied with their current curriculum. Neutral responses were consistent across grades (~17%), and dissatisfaction levels were similarly stable, indicating a persistent minority with concerns.

6. Do students in your school or classroom have access to the curriculum resources they need to succeed in math based upon readiness, interest, and learning profile?

Access to Curriculum Resources	PK-2	3-5	6-8	9-12
Yes, all students have access	623 (76.7%)	790 (76.5%)	598 (76.6%)	444 (76.9%)
No, there are disparities in access to resources	189 (23.3%)	243 (23.5%)	183 (23.4%)	133 (23.1%)

Across all grade bands, roughly three-quarters of teachers report that all students have access to the math curriculum resources they need (~77% in every band). Conversely, about one in four teachers cite persistent disparities in access, a proportion that remains remarkably consistent from PK–2 through grades 9–12.

7. In the previous question, you indicated there are disparities in access to resources. What do you observe as the disparities?

Observed Disparities in Access to Resources	PK-2	3-5	6-8	9-12
Access to high-quality instruction/teacher training	47 (25.5%)	51 (21.4%)	26 (14.4%)	20 (15.2%)
Quality instructional materials	42 (22.8%)	49 (20.6%)	44 (24.3%)	36 (27.3%)
Access to advanced coursework	26 (14.1%)	40 (16.8%)	30 (16.6%)	18 (13.6%)
Technology access	18 (9.8%)	30 (12.6%)	31 (17.1%)	20 (15.2%)
Funding inequities	21 (11.4%)	29 (12.2%)	26 (14.4%)	17 (12.9%)
Other	30 (16.3%)	39 (16.4%)	24 (13.3%)	19 (14.4%)

Disparities vary across grade bands. In PK–2, teachers most often report gaps in access to high-quality instruction or teacher training and quality instructional materials, while in grades 3–5, concerns are more evenly distributed across the choices. In grades 6–8 and 9–12, the focus shifts more toward materials (~24–27%), with mentions of teacher training dropping. Technology access increases slightly from ~10% in early grades to ~15% in later grades. Funding inequities and advanced coursework remain fairly consistent (~12–17%) across bands.

8. State assessments for K–8 students provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of State Assessments for K-8	PK-2	3-5	6-8	9-12
Strongly Disagree	195 (24.6%)	336 (33.2%)	256 (33.2%)	91 (16.3%)
Disagree	232 (29.3%)	319 (31.6%)	249 (32.3%)	120 (21.5%)
Agree	243 (30.6%)	288 (28.5%)	209 (27.1%)	89 (15.9%)
Strongly Agree	27 (3.4%)	39 (3.9%)	16 (2.1%)	12 (2.1%)
N/A	96 (12.1%)	29 (2.9%)	41 (5.3%)	247 (44.2%)

The majority of respondents across all grade bands either disagreed or strongly disagreed that state assessments provide sufficient information to make sound instructional decisions. Notably, grades 3–8 showed higher agreement than grades 9-12, where nearly half selected "N/A," indicating limited relevance or applicability of the K-8 state assessment to their grades.

9. District assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of District Assessments	PK-2	3-5	6-8	9-12
Strongly Disagree	53 (6.7%)	55 (5.4%)	54 (7.1%)	66 (11.7%)
Disagree	175 (22.1%)	218 (21.5%)	151 (19.7%)	135 (23.9%)
Agree	442 (55.7%)	570 (56.3%)	431 (56.3%)	261 (46.2%)
Strongly Agree	87 (11.0%)	144 (14.2%)	101 (13.2%)	60 (10.6%)
N/A	36 (4.5%)	25 (2.5%)	28 (3.7%)	43 (7.6%)

Across all grade bands, a majority of teachers agreed or strongly agreed that district assessments provide sufficient information to guide instructional decisions. Agreement was strongest in Grades 3–8 and PK–2, while responses in secondary showed relatively lower agreement and higher rates of disagreement or lacking applicability.

10. Local district/school assessments provide me with enough information that I can make sound instructional decisions to meet student needs.

Perception of Local Assessments	PK-2	3-5	6-8	9-12
Strongly Disagree	34 (4.3%)	33 (3.3%)	33 (4.3%)	33 (5.9%)
Disagree	101 (12.8%)	123 (12.2%)	83 (10.8%)	65 (11.6%)
Agree	422 (53.3%)	554 (54.8%)	420 (54.8%)	278 (49.5%)
Strongly Agree	164 (20.7%)	231 (22.8%)	182 (23.8%)	137 (24.4%)
N/A	71 (9.0%)	70 (6.9%)	48 (6.3%)	49 (8.7%)

Most teachers across all grade bands agreed or strongly agreed that local assessments provide enough information to support sound instructional decisions. Agreement was highest in grades 3-8, while PK-2 and 9-12 also showed strong support, though with slightly higher rates of "N/A" and disagreement.

11. Please rank the strategies and resources below from most helpful to least helpful in increasing parent and community involvement in supporting students' math learning.

Strategy / Resource	PK-2	3-5	6-8	9-12
Regular communication about student progress	1st (1.64)	1st (1.69)	1st (1.68)	1st (1.6)
Online resources for parents	2nd (2.9)	2nd (2.75)	2nd (2.58)	2nd (2.46)
Math workshops for parents	4th (3.26)	4th (3.25)	3rd (3.4)	3rd (3.48)
Family math nights	3rd (3.01)	3rd (3.11)	4th (3.48)	5th (3.96)
Community partnerships	5th (4.19)	5th (4.2)	5th (3.86)	4th (3.51)

Across grade bands, teachers consistently ranked regular communication about student progress as the most helpful strategy, with minimal variation in mean rank. However, family math nights were rated more favorably in PK-2 and 3-5 than in secondary, indicating shifting weight for family engagement as students advance in grade level.

12. What teaching methods do you primarily utilize when teaching mathematics? Use the arrows to the right of each statement to move the most frequently utilized methods to the top and least at the bottom.

Teaching Method	PK-2	3-5	6-8	9-12
Direct Instruction	1st (1.99)	1st (1.99)	1st (2.09)	1st (1.89)
Collaborative Learning	2nd (2.63)	2nd (2.46)	2nd (2.33)	2nd (2.26)
Game-Based Learning	3rd (3.92)	4th (4.39)	6th (5.04)	6th (5.46)
Conceptual Teaching	4th (4.07)	3rd (3.79)	3rd (3.68)	3rd (3.7)
Inquiry-Based Learning	5th (4.38)	5th (4.48)	4th (4.22)	4th (4.16)
Mastery-Based Learning	6th (5.03)	6th (5.03)	5th (4.93)	5th (4.94)
Project-Based Learning	7th (5.97)	7th (5.87)	7th (5.72)	7th (5.58)

Across all grade bands, Direct Instruction was consistently ranked as the most frequently used teaching method. Collaborative Learning held the second position across all grade levels, indicating widespread use of peer-based strategies. Notably, game-based learning was reasonably well-used in the elementary grades, but much less used in the secondary grades.

13. What type of support or professional learning would help you feel more confident and prepared to teach math?

Support Type	PK–2 (N = 835)	3–5 (N = 1059)	6–8 (N = 802)	9–12 (N = 597)
Curriculum implementation and differentiation of instruction	449 (54%)	596 (56%)	461 (58%)	325 (54%)
Pedagogical content knowledge	396 (47%)	479 (45%)	305 (38%)	223 (37%)
Assessments	295 (35%)	366 (35%)	258 (32%)	197 (33%)
General content knowledge	168 (20%)	197 (19%)	101 (13%)	65 (11%)
None (no needs)	152 (18%)	181 (17%)	181 (23%)	155 (26%)
Other	61 (7%)	76 (7%)	61 (8%)	45 (8%)

Across all grade bands, teachers most selected curriculum implementation as their top professional learning need. Interest in pedagogical content knowledge and assessments followed at lower but consistent rates, while general content knowledge was selected less often, especially in higher grades.

14. In what ways does your school or district support students from underrepresented groups in math, such as multilingual learners, advanced learners, or learners with specialized needs?

Support Type	PK–2 (N = 835)	3–5 (N = 1059)	6–8 (N = 802)	9–12 (N = 597)
Targeted interventions and accommodations	651 (78%)	860 (81%)	628 (78%)	428 (72%)
Advanced math opportunities and enrichment programs	289 (35%)	379 (36%)	386 (48%)	276 (46%)
Bilingual or culturally relevant resources	260 (31%)	337 (32%)	274 (34%)	231 (39%)
No specific support provided	119 (14%)	127 (12%)	87 (11%)	84 (14%)

Across all grade bands, schools/districts most commonly support underrepresented students in math through targeted interventions and accommodations, cited by over 72% of respondents in each group. Support for advanced math opportunities and bilingual or culturally relevant resources followed at much lower but relatively consistent rates, while around 13% reported that no specific support is provided.

15. What specific aspects of the curriculum contribute to your dissatisfaction?

Aspect	PK–2 (N = 835)	3–5 (N = 1059)	6–8 (N = 802)	9–12 (N = 597)
Level of support for diverse learners	418 (50%)	524 (50%)	406 (51%)	264 (44%)
Flexibility to adapt to student needs	371 (44%)	478 (45%)	373 (47%)	235 (39%)
Engagement and relevance for students	351 (42%)	457 (43%)	332 (41%)	241 (41%)
Clarity of the learning progression	251 (30%)	307 (29%)	211 (26%)	160 (27%)
Availability of resources and materials	187 (22%)	227 (21%)	195 (24%)	176 (30%)
Inclusion of formative and summative assessments	138 (17%)	149 (14%)	118 (15%)	100 (17%)
Other	126 (15%)	165 (16%)	111 (14%)	64 (11%)
Alignment with learning standards	50 (6%)	61 (6%)	38 (5%)	36 (6%)

For those who were dissatisfied with their curriculum, across all grade bands, the most frequently cited aspects were the level of support for diverse learners, flexibility to adapt to student needs, and student engagement and relevance. These concerns were consistent from PK through grade 12, indicating a clear need for curricula that better accommodate student diversity, allow for instructional adaptability, and connect learning more to students' experiences and interests.

School and district leaders comparison

Sample description:
The sample includes a total of 726 district and school leaders. Among them, 343 individuals identified as district-level leaders, including 181 superintendents or assistant superintendents and 162 district leaders in other roles. The remaining 383 respondents were school-level leaders, consisting of 354 principals or assistant principals and 29 individuals in other school leadership roles. While some survey items had missing responses, the nonresponse rate was relatively low (less than 5%), and missing data were therefore excluded from the report.

For analysis purposes, we combined these groups into two broader categories: District Leader (n = 343 including both superintendents and other district-level leaders) and School Leader (n = 383 including principals and other school-based leaders).

District and school leaders had varying supervisory responsibilities across grade levels. A majority of leaders reported overseeing elementary grades, particularly Grades 3–5 (28.5% district; 32.9% school) and PK–2 (28.3% district; 31.1% school). Middle school grades (6–8) were also commonly supervised, especially among district leaders (28.0%) compared to school leaders (22.8%). In contrast, fewer leaders reported supervising high school grades (9–12), with only 15.1% of district leaders and 12.9% of school leaders indicating this responsibility. These patterns suggest that most leaders in the sample work with elementary and middle school grades.

1. To what extent do you believe that parents and the broader community are involved in supporting students' learning of mathematics in your district?

Community Involvement Level	District Leaders	School Leaders
Very involved	25 (7.4%)	24 (6.3%)
Somewhat involved	148 (43.7%)	137 (36.1%)
Not very involved	146 (43.1%)	184 (48.4%)
Not involved at all	20 (5.9%)	35 (9.2%)

The majority of both district and school leaders perceive parents and the community as only somewhat or not very involved in supporting students' math learning. Very few respondents reported high levels of community engagement.

2. How does your school ensure that all students have equitable access to high-quality math instruction?

Equity Strategy	District Leaders (N = 343)	School Leaders (N = 383)
Differentiated instruction and support for diverse learners	293 (85%)	307 (80%)
Universal screening for mathematics	254 (74%)	232 (61%)
Curriculum evaluation for effectiveness as measured by state/local assessments	227 (66%)	148 (39%)
Advanced mathematics courses available to all students	190 (55%)	168 (44%)
Use of State/Local assessment data to identify and address achievement gaps	291 (85%)	276 (72%)
Transitional mathematics coursework (high school only)	105 (31%)	74 (19%)
Other	9 (3%)	11 (3%)

District leaders more frequently indicated that their schools provide equitable access to math instruction through strategies such as differentiated support, use of assessment data, and curriculum evaluation. In contrast, school leaders reported lower implementation rates across most areas, suggesting possible gaps between district-level policy intentions and school-level practices.

3. State assessment data for K-8 students provide me with enough information so that I can support/guide school leaders in making sound instructional decisions about student achievement in mathematics.

State Assessment for K-8 Instructional Decision Making	District Leaders	School Leaders
Strongly Agree	8 (2.4%)	10 (2.6%)
Agree	138 (40.6%)	127 (33.6%)
Disagree	128 (37.6%)	132 (34.9%)
Strongly Disagree	54 (15.9%)	73 (19.3%)
N/A	12 (3.5%)	36 (9.5%)

4. State assessment data for 9-12 students provide me with enough information so that I can support/guide school leaders in making sound instructional decisions about student achievement in mathematics.

State Assessment for 9-12 Instructional Decision Making	District Leaders	School Leaders
Strongly Agree	3 (0.9%)	6 (1.6%)
Agree	56 (16.7%)	40 (10.8%)
Disagree	73 (21.8%)	55 (14.8%)
Strongly Disagree	44 (13.1%)	17 (4.6%)
N/A	159 (47.5%)	254 (68.3%)

For Grades 9-12, both district and school leaders were less confident in the usefulness of state assessment data for guiding instructional decisions. A majority of respondents selected “N/A”, suggesting that many do not work with high school data or find it inapplicable. Among those who did respond substantively (with N/A removed), district and school leaders were skeptical of the assessments’ value for instructional decisions, with only 34% of district leaders and 39% of school leaders agreeing or strongly agreeing that they have such value.

5. District assessment data provides me with enough information so that I can support/guide school leaders in making sound instructional decisions about student achievement in mathematics.

District Assessment for Instructional Decision Making	District Leaders	School Leaders
Strongly Agree	63 (18.7%)	61 (16.1%)
Agree	226 (67.1%)	223 (58.8%)
Disagree	43 (12.8%)	68 (17.9%)
Strongly Disagree	5 (1.5%)	11 (2.9%)
N/A	-	16 (4.2%)

District and school leaders were generally positive about the usefulness of district assessment data for guiding instructional decisions.

6. Local assessment data provides me with enough information so that I can support/guide school leaders in making sound instructional decisions about student achievement in mathematics.

Local Assessment for Instructional Decision Making	District Leaders	School Leaders
Strongly Agree	71 (21.0%)	84 (22.2%)
Agree	218 (64.5%)	216 (57.1%)
Disagree	44 (13.0%)	53 (14.0%)
Strongly Disagree	5 (1.5%)	7 (1.9%)
N/A	-	18 (4.8%)

Both district and school leaders generally viewed local assessment data as useful for supporting instructional decisions in mathematics.

7. What factors contribute to your school's or district's use of assessment data in the school improvement planning process?

Assessment Data Use	District Leaders (N = 343)	School Leaders (N = 383)
Administrator understanding and skill in utilizing district data to make decisions	287 (84%)	-
Time or resource constraints (e.g., cost of data analysis tools, dedicated staff time for research)	223 (65%)	-
District or state mandates on data-driven decision-making	154 (45%)	154 (40%)
Access to appropriate data to make decisions	148 (43%)	-
Priority level set by district administrators or local board of education	133 (39%)	-
Lack of confidence in the reliability or validity of district-level data available	67 (20%)	-
Collaboration among teachers, administrators, and staff to interpret data	-	271 (71%)

Alignment of assessment data with instructional planning and curriculum decisions	-	266 (70%)
Time allocated for staff to analyze and act on assessment data	-	249 (65%)
Leadership support for data-informed decisions	-	241 (63%)
Availability of high-quality assessment data and tools	-	203 (53%)
Professional development and training on data analysis and its use	-	184 (48%)
Other	14 (4%)	7 (2%)

District leaders identified administrator understanding, available time and resources, and policy mandates as the primary factors influencing the use of assessment data in school improvement planning. In contrast, school leaders emphasized collaborative data interpretation, alignment with instruction and curriculum, and time to analyze and use assessment data. Together, these patterns indicate that effective assessment data use depends on both structural capacity at the district level and active collaboration at the school level.

District leader survey disaggregated by area

1. Does your district utilize math curriculum that is aligned to the Illinois learning standards for mathematics?

Math curriculum alignment	East Central	Northeast	Northwest	Southeast	Southwest	West Central
No	0 (0.0%)	3 (1.8%)	1 (2.6%)	0 (0.0%)	0 (0.0%)	3 (8.6%)
Yes	31 (100.0%)	168 (98.2%)	37 (97.4%)	36 (100.0%)	28 (100.0%)	32 (91.4%)

Across all regions, the majority of districts reported using a math curriculum aligned to the Illinois Learning Standards, with “Yes” responses consistently above 90%. In contrast, “No” responses were minimal or absent, indicating widespread adoption of aligned curricula statewide.

2. Does your district use a deliberate curriculum review cycle?

Curriculum review cycle	Southwest (N = 28)	Southeast (N = 36)	East Central (N = 31)	West Central (N = 35)	Northwest (N = 38)	Northeast (N = 173)
Annually	9 (32%)	9 (25%)	3 (10%)	3 (9%)	6 (16%)	46 (27%)
Every other year	4 (14%)	4 (11%)	2 (7%)	1 (3%)	3 (8%)	5 (3%)
No	0 (0.0%)	0 (0.0%)	3 (10%)	0 (0%)	0 (0%)	4 (2%)
Other	12 (43%)	13 (36%)	19 (61%)	13 (37%)	10 (26%)	69 (40%)
Unsure	3 (11%)	8 (22%)	6 (19%)	7 (20%)	7 (18%)	13 (8%)

Across all regions, most districts reported using a deliberate curriculum review cycle categorized as “Other,” suggesting varied or non-standardized review timelines. Annual review cycles were most common in the Northeast (27%) and Southwest (32%) regions. Overall, the data indicate substantial regional variation in how districts systematically approach curriculum review.

3. How often do you review, discuss, and analyze available data including local and or state assessment data with teachers, leadership teams, and/or other stakeholders?

Assessment review frequency	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Annually	3 (9.7%)	8 (4.7%)	1 (2.7%)	8 (22.2%)	4 (14.3%)	3 (8.6%)
Frequently	11 (35.5%)	102 (59.3%)	19 (51.4%)	15 (41.7%)	11 (39.3%)	18 (51.4%)
Never	0 (0.0%)	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Often	16 (51.6%)	59 (34.3%)	16 (43.2%)	12 (33.3%)	12 (42.9%)	13 (37.1%)
Rarely	1 (3.2%)	2 (1.2%)	1 (2.7%)	1 (2.8%)	1 (3.6%)	1 (2.9%)

Most districts review assessment data either “Frequently” or “Often” during the school year, indicating a strong emphasis on regular data-informed practices. In contrast, responses indicating “Rarely,” “Annually,” or “Never” were minimal, suggesting that infrequent review is relatively uncommon.

4. To what extent does the review of available data, including local and/or state assessment data, influence decisions about curriculum, professional learning, and resources for schools?

Influence of data decision	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Extremely important	10 (32.3%)	91 (52.9%)	12 (32.4%)	14 (38.9%)	12 (42.9%)	16 (45.7%)
Important	18 (58.1%)	63 (36.6%)	18 (48.6%)	18 (50.0%)	13 (46.4%)	13 (37.1%)
Not emphasized	1 (3.2%)	5 (2.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.9%)
Somewhat important	2 (6.5%)	13 (7.6%)	7 (18.9%)	4 (11.1%)	3 (10.7%)	5 (14.3%)

Most of districts reported that data is either “extremely important” or “important” in guiding educational decisions, reflecting a strong data-driven approach. Only a small number of responses indicated that data is not emphasized, suggesting limited resistance to data-informed practices.

5. How well does your district support funding for teachers' mathematics professional learning?

Math PD funding support	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Fully Supported	17 (54.8%)	84 (48.8%)	13 (35.1%)	19 (52.8%)	13 (46.4%)	15 (42.9%)
Minimally Supported	1 (3.2%)	21 (12.2%)	5 (13.5%)	1 (2.8%)	4 (14.3%)	5 (14.3%)
Not Supported	1 (3.2%)	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Partially Supported	12 (38.7%)	66 (38.4%)	19 (51.4%)	16 (44.4%)	11 (39.3%)	15 (42.9%)

Most districts reported either "Fully Supported" or "Partially Supported" funding for math professional learning, with relatively few indicating minimal or no support.

6. How was your district's current mathematics curriculum selected? Select all that apply.

Curriculum selection methods	Southwest (N = 28)	Southeast (N = 36)	East Central (N = 31)	West Central (N = 35)	Northwest (N = 38)	Northeast (N = 173)
Stakeholders collectively evaluate and approve	20 (71%)	27 (75%)	25 (81%)	24 (69%)	30 (79%)	150 (87%)
District evaluates and approves	6 (21%)	11 (31%)	8 (26%)	13 (37%)	15 (39%)	67 (39%)
School administration evaluates and approves	8 (29%)	6 (17%)	11 (35%)	10 (29%)	7 (19%)	51 (29%)
School board evaluates and approves	5 (18%)	5 (14%)	0 (0%)	5 (14%)	6 (16%)	31 (18%)
Not applicable	0 (0%)	0 (0%)	0 (0%)	3 (9%)	0 (0%)	3 (2%)
Other	2 (7%)	1 (3%)	2 (6%)	0 (0%)	0 (0%)	0 (0%)

Across all regions, stakeholder collaboration was the most common approach to curriculum selection, reported by over two-thirds of respondents in every area and reaching as high as 87% in the Northeast. District-level decision-making was the second most frequent method, particularly in the Northwest, Northeast, and West Central regions. School administration and school board approval processes were less common for some, while "Not applicable" and "Other" responses were minimal. These patterns suggest that curriculum selection is largely a collaborative process, though the balance between district and school-level authority varies by region.

7. How does your district evaluate if there are content gaps in the mathematics curriculum utilized? Select all that apply.

Content gaps evaluation methods	Southwest (N = 28)	Southeast (N = 36)	East Central (N = 31)	West Central (N = 35)	Northwest (N = 38)	Northeast (N = 173)
State assessment results	26 (93%)	30 (83%)	20 (65%)	28 (80%)	32 (84%)	139 (80%)
Vertical/horizontal alignment	24 (86%)	25 (69%)	24 (77%)	26 (74%)	25 (66%)	144 (83%)
Scope and sequence review	22 (79%)	21 (58%)	23 (74%)	25 (71%)	24 (63%)	136 (79%)
Local assessment trends	20 (71%)	19 (53%)	18 (58%)	24 (69%)	27 (71%)	142 (82%)
Stakeholder feedback	17 (61%)	19 (53%)	22 (71%)	17 (49%)	23 (61%)	125 (72%)
Progress monitoring	21 (75%)	31 (86%)	22 (71%)	21 (60%)	23 (61%)	88 (51%)
Other	0 (0%)	1 (3%)	1 (3%)	2 (6%)	3 (8%)	13 (8%)

Across all regions, the most common methods for identifying content gaps were state assessment results and vertical/horizontal alignment, both cited by more than two-thirds of respondents in nearly every region. Scope and sequence reviews and local assessment trends also played prominent roles, especially with Northeast districts. Stakeholder feedback and progress monitoring were moderately used, while “Other” methods were rare. This suggests that schools and districts emphasize systematic data sources and curriculum coherence when evaluating content gaps.

8. In what ways does your district identify the support needs for underrepresented groups in math, such as multilingual learners, advanced learners, and learners with specialized needs? Select all that apply.

Support need identification methods	Southwest (N = 28)	Southeast (N = 36)	East Central (N = 31)	West Central (N = 35)	Northwest (N = 38)	Northeast (N = 173)
Direct assessment results	25 (89%)	30 (83%)	29 (94%)	30 (86%)	34 (90%)	161 (93%)
Teacher recommendation	26 (93%)	35 (97%)	29 (94%)	28 (80%)	32 (84%)	134 (78%)
State test results	19 (68%)	23 (64%)	19 (61%)	20 (57%)	28 (74%)	134 (78%)
Parent recommendation	12 (43%)	16 (44%)	11 (36%)	8 (23%)	11 (29%)	60 (35%)
Other	2 (7%)	4 (11%)	1 (3%)	2 (6%)	2 (5%)	10 (6%)
Student portfolio	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (5%)

Across all regions, teacher recommendations and district assessment results were the most commonly used methods for identifying support needs, with more than 80% of respondents across nearly all regions relying on them. State test results were also frequently used, particularly in the Northwest and Northeast. Parent input and "Other" methods varied widely, with the Northeast reporting notably higher use of additional approaches. Student portfolios remained the least used method across all regions, indicating limited integration of qualitative evidence in support identification processes.

9. In what ways does your district support students from underrepresented groups (e.g., ELs, students with disabilities, children identified for enrichment or acceleration in mathematics) in math? Select all that apply.

Support special needs students	Southwest (N = 28)	Southeast (N = 36)	East Central (N = 31)	West Central (N = 35)	Northwest (N = 38)	Northeast (N = 173)
Accommodations (IEP/504)	24 (86%)	34 (94%)	28 (90%)	28 (80%)	35 (92%)	157 (91%)
Targeted interventions (MTSS)	27 (96%)	26 (72%)	29 (94%)	30 (86%)	32 (84%)	160 (93%)
Acceleration/enrichment programs	13 (46%)	14 (39%)	17 (55%)	23 (66%)	27 (71%)	144 (83%)
Multilingual services	10 (36%)	11 (31%)	13 (42%)	11 (31%)	24 (63%)	149 (86%)
Culturally relevant resources	9 (32%)	5 (14%)	7 (23%)	0 (0%)	6 (16%)	80 (46%)
Other	1 (4%)	3 (8%)	0 (0%)	4 (11%)	1 (3%)	4 (2%)
No specific support	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (2%)

Across all the regions, accommodations (IEP/504) and targeted interventions (MTSS) were the most common supports for students with special needs, with over 80% of districts in most regions reporting their use. Acceleration and enrichment programs were also notable, particularly in the Northeast and Northwest regions. Multilingual services and culturally relevant resources were implemented less consistently, with stronger emphasis in the Northeast. "Other" and "No specific support" were minimal, indicating most districts provide structured supports for diverse learners.

10. Please rank the strategies and resources below from most helpful to least helpful in increasing parent and community involvement in supporting students' math learning.

Option	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Regular communication	1st	1st	1st	1st	1st	1st
Online resources	3rd	2nd	2nd	2nd	2nd	2nd
Family math nights	2nd	3rd	3rd	3rd	4th	3rd
Math workshops	4th	4th	4th	5th	3rd	5th
Community partnerships	5th	5th	5th	4th	5th	4th

Across all regions, "Regular communication about student progress" was consistently ranked 1st, indicating widespread agreement on its importance in fostering parent and community involvement in math learning. However, regions differed in how they valued other strategies.

School leader survey disaggregated by area

1. Rate your satisfaction with the curriculum currently being used in your school.

Curriculum satisfaction	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Very satisfied	18 (42.9%)	43 (25.4%)	15 (32.6%)	6 (22.2%)	8 (21.6%)	12 (22.6%)
Somewhat satisfied	15 (35.7%)	76 (45.0%)	17 (37.0%)	10 (37.0%)	16 (43.2%)	24 (45.3%)
Neutral	6 (14.3%)	28 (16.6%)	8 (17.4%)	5 (18.5%)	7 (18.9%)	10 (18.9%)
Somewhat dissatisfied	2 (4.8%)	17 (10.1%)	5 (10.9%)	3 (11.1%)	1 (2.7%)	6 (11.3%)
Dissatisfied	1 (2.4%)	5 (3.0%)	1 (2.2%)	3 (11.1%)	5 (13.5%)	1 (1.9%)

Most respondents reported being either very satisfied or somewhat satisfied with their current math curriculum. East Central had the highest percentage of very satisfied responses at 42.9%.

2. What specific aspects of the curriculum contribute to your satisfaction?

Aspect to curriculum satisfaction	Southwest (N = 37)	Southeast (N = 27)	East Central (N = 42)	West Central (N = 53)	Northwest (N = 46)	Northeast (N = 169)
Alignment with learning standards	30 (81%)	20 (74%)	37 (88%)	44 (83%)	41 (89%)	151 (89%)
Availability of resources and materials	16 (43%)	14 (52%)	30 (71%)	31 (59%)	35 (76%)	107 (63%)
Clarity of the learning progression	17 (46%)	10 (37%)	20 (48%)	23 (43%)	25 (54%)	81 (48%)
Engagement and relevance for students	12 (32%)	14 (52%)	27 (64%)	25 (47%)	24 (52%)	98 (58%)
Flexibility to adapt to student needs	17 (46%)	11 (41%)	12 (29%)	19 (36%)	17 (37%)	49 (29%)
Inclusion of formative and summative assessments	10 (27%)	12 (44%)	21 (50%)	22 (42%)	24 (52%)	84 (50%)

Level of support for diverse learners	9 (24%)	7 (26%)	11 (26%)	18 (34%)	19 (41%)	53 (31%)
Other	1 (3%)	1 (4%)	3 (7%)	3 (6%)	3 (7%)	14 (8%)

Among those who are satisfied with their math curriculum, alignment with learning standards remained the most frequently cited factor, selected by a large majority in every region (ranging from 74% in Southeast to 89% in Northwest and Northeast regions). Availability of resources and materials and clarity of the learning progression were also commonly identified contributors to satisfaction, with most regions reporting between 43% and 76%. Engagement and relevance for students, along with flexibility to adapt to student needs and inclusion of assessments, were noted by roughly one-third to two-thirds of respondents, showing moderate but varied citation across regions. “Other” responses remained minimal across all areas.

3. What specific aspects of the curriculum contribute to your dissatisfaction?

Aspect to curriculum dissatisfaction	Southwest (N = 37)	Southeast (N = 27)	East Central (N = 42)	West Central (N = 53)	Northwest (N = 46)	Northeast (N = 169)
Alignment with learning standards	5 (14%)	4 (15%)	0 (0%)	4 (8%)	0 (0.0%)	11 (7%)
Availability of resources and materials	9 (24%)	8 (30%)	5 (12%)	11 (21%)	9 (20%)	36 (21%)
Clarity of the learning progression	7 (19%)	10 (37%)	7 (17%)	15 (28%)	13 (28%)	42 (25%)
Engagement and relevance for students	20 (54%)	7 (26%)	9 (21%)	18 (34%)	15 (33%)	53 (31%)
Flexibility to adapt to student needs	9 (24%)	11 (41%)	16 (38%)	14 (26%)	22 (48%)	73 (43%)
Inclusion of formative and summative assessments	5 (14%)	3 (11%)	4 (10%)	3 (6%)	4 (9%)	35 (21%)
Level of support for diverse learners	20 (54%)	13 (48%)	15 (36%)	14 (26%)	19 (41%)	84 (50%)
Other	4 (11%)	3 (11%)	15 (36%)	7 (13%)	4 (9%)	25 (15%)

Across all regions, the most frequently cited contributors to dissatisfaction with the mathematics curriculum were limited flexibility to adapt to student needs (ranging from 24% in Southwest to 48% in Northwest) and insufficient support for diverse learners (from 26% in West Central to 54% in Southwest). Engagement and relevance for students also appeared as a recurring concern, especially in the Southwest (54%) region. Clarity of the learning progression and availability of resources and

materials were mentioned somewhat less often but still reflected meaningful sources of discontent in several areas. Overall, dissatisfaction was concentrated more on adaptability, inclusivity, and engagement than on alignment with standards or assessment practices.

4. Please describe the frequency of mathematics professional learning your teachers receive or have received with the current curriculum.

Math PD frequency	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Annually (approximately once annually)	10 (23.8%)	31 (18.3%)	11 (23.9%)	10 (38.5%)	13 (35.1%)	8 (15.4%)
Frequently (multiple times in the current school year)	6 (14.3%)	54 (32.0%)	3 (6.5%)	3 (11.5%)	4 (10.8%)	9 (17.3%)
Never (teachers never received professional learning for the current math curriculum)	0 (0.0%)	4 (2.4%)	0 (0.0%)	4 (15.4%)	0 (0.0%)	2 (3.8%)
Often (a few times in the current school year)	11 (26.2%)	47 (27.8%)	10 (21.7%)	1 (3.8%)	6 (16.2%)	13 (25.0%)
Rarely (at least once in the last three school years)	15 (35.7%)	33 (19.5%)	22 (47.8%)	8 (30.8%)	14 (37.8%)	20 (38.5%)

Across regions, the frequency of mathematics professional learning varied significantly. In East Central and Northwest, most respondents reported it occurs rarely (35.7% and 47.8%, respectively). Northeast stood out with the highest rate of frequent learning; 32% reported receiving it multiple times during the school year, and 27.8% noted it occurs often. In contrast, Southeast had a more polarized distribution, with 38.5% indicating annual learning and 30.8% noting it occurs rarely, while 15.4% said it never happens. Southwest and West Central also leaned toward less frequent PD, with rarely reported by 37.8% and 38.5% of respondents, respectively. Overall, more consistent and frequent professional learning appears to be limited to specific regions like Northeast.

5. If your school is permitted to manage its own budget, to what extent is funding provided for teachers' mathematics professional learning?

School level budget for math PD	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Fully Supported - I am able to fully meet my teachers' mathematics professional learning needs.	9 (21.4%)	45 (27.1%)	21 (45.7%)	14 (51.9%)	18 (50.0%)	16 (30.2%)

Minimally Supported - Some funding is available, but it is very limited.	9 (21.4%)	37 (22.3%)	7 (15.2%)	2 (7.4%)	5 (13.9%)	8 (15.1%)
Not Supported - No funding is available for professional learning.	1 (2.4%)	7 (4.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Not applicable - My district does not permit school-level budget determinations.	6 (14.3%)	22 (13.3%)	1 (2.2%)	4 (14.8%)	4 (11.1%)	8 (15.1%)
Partially Supported - I am supportive, but professional learning funding is somewhat limited.	17 (40.5%)	55 (33.1%)	17 (37.0%)	7 (25.9%)	9 (25.0%)	21 (39.6%)

Across most regions, partial support for mathematics professional learning was the most common response: 40.5% in East Central, 39.6% in West Central, and 33.1% in Northeast. Fully supported funding was most prevalent in Southeast (51.9%), Southwest (50%), and Northwest (45.7%), indicating stronger localized support. Meanwhile, the “not applicable” response was notable in some areas, particularly in West Central and East Central (15.1% and 14.3%, respectively), suggesting district-level control still limits budget autonomy in parts of the state. Overall, while some schools demonstrate strong support, variability across regions points to uneven access to professional learning resources depending on local control and funding structures.

6. To what extent does your school district and/or state assessment data influence decisions about curriculum, professional learning, and resources for teachers and staff?

Assessment data influence	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Extremely Important	13.0 (31.0%)	76.0 (45.0%)	14.0 (30.4%)	5.0 (18.5%)	16.0 (43.2%)	13.0 (25.5%)
Important	20.0 (47.6%)	64.0 (37.9%)	24.0 (52.2%)	14.0 (51.9%)	11.0 (29.7%)	30.0 (58.8%)
Not Emphasized	2.0 (4.8%)	8.0 (4.7%)	2.0 (4.3%)	2.0 (7.4%)	2.0 (5.4%)	1.0 (2.0%)
Somewhat Important	7.0 (16.7%)	21.0 (12.4%)	6.0 (13.0%)	6.0 (22.2%)	8.0 (21.6%)	7.0 (13.7%)

Across most regions, a majority of respondents indicated that assessment data is either extremely important or important in informing decisions about curriculum, professional learning, and resources. Notably, West Central (58.8%), Northwest (52.2%), and Southeast (51.9%) had the highest percentages of respondents indicating data is “important and utilized in most decisions.” Meanwhile, Northeast (45%) and Southwest (43.2%) led in viewing data as “extremely important and utilized in all decisions.” Instances where data is “not emphasized” were low across all areas, indicating a strong overall emphasis on data-informed decision-making.

7. How often do you review, discuss, and analyze your school district and/or state assessment data with teachers, leadership teams and/or other stakeholders?

Data review frequency with stakeholders	East Central	Northeast	Northwest	Southeast	Southwest	West Central
Annually	7.0 (17.1%)	7.0 (4.1%)	6.0 (13.0%)	6.0 (22.2%)	10.0 (27.0%)	3.0 (5.8%)
Frequently	20.0 (48.8%)	103.0 (60.9%)	22.0 (47.8%)	9.0 (33.3%)	14.0 (37.8%)	22.0 (42.3%)
Never	-	3.0 (1.8%)	-	1.0 (3.7%)	-	1.0 (1.9%)
Often	14.0 (34.1%)	52.0 (30.8%)	17.0 (37.0%)	10.0 (37.0%)	9.0 (24.3%)	23.0 (44.2%)
Rarely	-	4.0 (2.4%)	1.0 (2.2%)	1.0 (3.7%)	4.0 (10.8%)	3.0 (5.8%)

The most common frequency for reviewing assessment data with teachers and stakeholders is "Frequently." The "Often" category (a few times per year) is also consistently reported across regions, notably in West Central (44.2%) and Northwest (37%). Reviewing data annually was less common overall but relatively higher in Southeast (22.2%) and Southwest (27%). Reports of never reviewing data were rare with only 1.8% in Northeast, 3.7% in Southeast, and 1.9% in West Central. Most school leaders report maintaining at least occasional engagement with data analysis practices.

8. In what ways does your school or district identify the support needs for underrepresented groups in math, such as multilingual learners, advanced learners, and learners with specialized needs?

Support special needs identification	Southwest (N = 37)	Southeast (N = 27)	East Central (N = 42)	West Central (N = 53)	Northwest (N = 46)	Northeast (N = 169)
Teacher recommendation	34 (92%)	26 (96%)	34 (81%)	41 (77%)	41 (89%)	144 (85%)
Results of district assessments	31 (84%)	21 (78%)	36 (86%)	48 (91%)	39 (85%)	147 (87%)
Results of state-required testing	25 (68%)	16 (59%)	26 (62%)	33 (62%)	24 (52%)	125 (74%)
Parent recommendation	11 (30%)	12 (44%)	20 (48%)	15 (28%)	15 (33%)	66 (39%)
Student portfolio submission	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (9%)	8 (5%)
Other	1 (3%)	1 (4%)	3 (7%)	2 (4%)	0 (0%)	9 (5%)

Across regions, teacher recommendation and results of district assessments were the most commonly cited factors used to support special needs identification, with selection rates generally above 80%. Results of state-required testing were also widely referenced, though at lower levels between 52%

and 74%. Parent recommendations appeared less frequently, cited by roughly one-quarter to one-half of respondents depending on the region. Very few identified student portfolio submission or other methods as primary contributors. Overall, the data suggest that identification practices rely most heavily on teacher input and district assessment data, with less emphasis on family input or alternative evidence of student needs.

9. What methods does your school use to support students from underrepresented groups (e.g., ELs, students with disabilities, children identified for enrichment or acceleration in mathematics) in math? Select all that apply.

Support special need students	Southwest (N = 37)	Southeast (N = 27)	East Central (N = 42)	West Central (N = 53)	Northwest (N = 46)	Northeast (N = 169)
Accommodations (IEP/504)	33 (89%)	21 (78%)	40 (95%)	49 (93%)	42 (91%)	154 (91%)
Targeted interventions (MTSS)	31 (84%)	21 (78%)	34 (81%)	44 (83%)	42 (91%)	148 (88%)
Multilingual services	13 (35%)	6 (22%)	13 (31%)	14 (26%)	16 (35%)	121 (72%)
Acceleration, gifted, or enrichment programs based on mathematics assessment scores	7 (19%)	6 (22%)	14 (33%)	19 (36%)	20 (44%)	110 (65%)
Culturally relevant resources	5 (14%)	0 (0%)	0 (0%)	4 (8%)	6 (13%)	53 (31%)
Other	2 (5%)	3 (11%)	2 (5%)	2 (4%)	1 (2%)	4 (2%)
No specific support provided	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (2%)

Across regions, accommodations through IEP or 504 plans and targeted interventions (MTSS) were the most widely reported supports for students with special needs, consistently selected by more than three-quarters of respondents in every area. Multilingual services and acceleration or enrichment programs were also commonly mentioned, though at lower rates, with notable variation across regions, particularly higher reporting of multilingual supports in the Northeast. Culturally relevant resources appeared less frequently, cited by under one-third of respondents overall, and only in select regions. Few respondents indicated “Other” supports or no specific support at all.

10. What factors contribute to your school's use of assessment data in the school improvement planning process?

Assessment data use factors	Southwest (N = 37)	Southeast (N = 27)	East Central (N = 42)	West Central (N = 53)	Northwest (N = 46)	Northeast (N = 169)
Collaboration among teachers, administrators, and staff to interpret data	25 (68%)	19 (70%)	26 (62%)	41 (77%)	38 (83%)	118 (70%)
Alignment of assessment data with instructional planning and curriculum decisions	24 (65%)	19 (70%)	28 (67%)	33 (62%)	36 (78%)	123 (73%)
Time allocated for staff to analyze and act on assessment data	21 (57%)	20 (74%)	27 (64%)	34 (64%)	32 (70%)	111 (66%)
Leadership support for data-informed decisions	24 (65%)	18 (67%)	26 (62%)	33 (62%)	29 (63%)	109 (65%)
Availability of high-quality assessment data and tools	14 (38%)	13 (48%)	24 (57%)	27 (51%)	23 (50%)	97 (57%)
Professional development and training on data analysis and its use	19 (51%)	9 (33%)	14 (33%)	27 (51%)	20 (44%)	91 (54%)
District or state mandates on data-driven decision-making	22 (60%)	10 (37%)	18 (43%)	18 (34%)	20 (44%)	65 (39%)
Other	0 (0%)	0 (0%)	1 (2%)	2 (4%)	0 (0%)	4 (2%)

Across all regions, collaboration among teachers, administrators, and staff and alignment of assessment data with instructional planning were the most frequently identified factors supporting the use of assessment data, reported by roughly two-thirds to over three-quarters of respondents. Time allocated for data analysis and leadership support also featured prominently, cited by more than 60% in most areas. Availability of high-quality data and tools and professional development on data use were cited moderately with slightly lower rates across regions, though both remained important enablers of data-driven practice. District or state mandates were noted less consistently, varying widely from about one-third in West Central to 60% in the Southwest. Few respondents selected "Other."

External stakeholder and ROE/ISC responses

A total of 40 individuals participated in the survey, representing a diverse range of roles and geographic regions across Illinois. Among them, 21 respondents identified as staff from Regional Offices of Education (ROE) or Intermediate Service Centers (ISCs), and 19 were administrators of educator preparation programs at Institutions of Higher Education (IHEs). Participants represented 25 different counties, with the most responses coming from Cook County (n = 10), followed by Peoria County (n = 3), and DuPage, McLean, Stephenson, and Whiteside Counties (each n = 2). Other counties with single respondents included Champaign, DeKalb, Henry, Jackson, Kane, Kankakee, Kendall, LaSalle, Macon, McDonough, Morgan, Pulaski, Sangamon, St. Clair, White, Will, and Winnebago. Given the relatively small sample size, the analysis was aggregated by respondent role rather than disaggregated by geographic area or other demographic characteristics.

ROE or ISC staff responses.

1. Does your office provide any guidance to districts within your region in the selection of math curriculum that is aligned to the Illinois learning standards for mathematics?

Math curriculum Guidance	n	Percent
Yes	15	71.4%
No	6	28.6%

The majority of respondents (71.4%) indicated that their office provides guidance to districts within their region regarding the selection of mathematics curricula aligned to the Illinois Learning Standards. A smaller portion (28.6%) reported that they do not offer such guidance.

2. Please describe the frequency in which mathematics professional learning is offered.

Frequency of mathematics PD	n	Percent
Annually (approximately once annually)	4	20%
Frequently (multiple times in the current school year)	9	45%
Often (a few times in the current school year)	6	30%
Rarely (at least once in the last three school years)	1	5%

A significant majority of respondents (95%) reported that mathematics professional learning is offered at least annually during the school year. A minority (5%) indicated rare opportunities over the past three years.

3. Does your ROE/ISC fund or offer funding opportunities to support mathematics professional learning in your region?

Math funding support	n	Percent
No funding is provided for professional learning.	9	47.4%
Yes, occasionally. Funding is available, but only under certain conditions or on an irregular basis	6	31.6%
Yes, regular funding is consistently available and typically available on an annual or ongoing basis	4	21.1%

Nearly half of respondents (47.4%) reported that no funding is provided to support mathematics professional learning in their region. This suggests that professional development is not systematically supported through sustained financial investment in many regions. This may point to broader systemic or budgetary constraints that affect the ability of ROEs/ISCs to offer ongoing professional learning supports.

4. How well does your office support and allocate funding for teachers' mathematics professional learning?

Math funding allocation support	n	Percent
Fully Supported - We are able to fully meet the teachers' mathematics professional learning needs within our area.	3	30%
Minimally Support - Some funding is available, but it is very limited.	5	50%
Partially Supported - We are supportive, but mathematics professional learning funding is somewhat limited.	2	20%

Half of respondents (50%) reported minimal funding support for mathematics professional learning, while only 30% indicated they are fully able to meet teachers' needs. This suggests that funding constraints are a common barrier across regions, with most offices unable to provide consistent, comprehensive support.

5. To what extent do districts within your region utilize assessment data to influence decisions about curriculum, professional learning, and resources for teachers and staff?

Assessment data usage	n	Percent
Data is extremely important and frequently utilized in all decisions.	2	10.5%
Data is important and is utilized in most decisions.	11	57.9%
Data is somewhat important and sometimes utilized in decisions.	6	31.6%
Data is not emphasized and is rarely utilized in decisions.	0	0%

Most respondents (57.9%) reported that assessment data is important and regularly used in decision-making related to curriculum, professional learning, and resources. While only 10.5% use data extensively in all decisions, nearly a third (31.6%) apply it somewhat inconsistently. These patterns suggest strong usage of data-driven decision-making, though implementation varies.

6. Which of the following types of guidance does your office provide to districts regarding the selection of math curriculum aligned to the Illinois learning standards for mathematics?

Types of math curriculum guidance	N = 21	Percent
Technical assistance or coaching for collaborative teams	13	62%
Professional development on standards-aligned instruction	12	57%
Selection of curriculum evaluation tools or rubrics	11	52%
Recommended curriculum materials or programs	6	29%
Guidance on integrating equity and cultural relevance	5	24%
Provide sample scope and sequence guides	5	24%
Other	3	14%

The most commonly provided types of guidance include technical assistance or coaching for collaborative teams, professional development on standards-aligned instruction, and curriculum evaluation tools or rubrics. Less frequently offered supports include equity-focused guidance, sample

scope and sequence guides, and recommended curriculum materials. These results suggest a focus on capacity-building and evaluative tools, with fewer offices offering concrete materials or equity-specific resources.

7. Please select the type of mathematics professional learning your office provides to districts within your region.

Types of math PD	N = 21	Percent
Math-centered Professional Learning Communities (i.e., comprised of educators of the same discipline typically focusing on high quality instructional practices for improved student outcomes in a specific discipline)	14	67%
Math-centered collaborative teams (i.e., comprised of educators of various disciplines typically focusing on high quality instructional practices for improved student outcomes)	13	62%
Math-centered Communities of Practice (i.e., comprised of educators of various disciplines typically focusing on a problem of practice in common)	9	43%
Other	2	10%

The most frequently offered mathematics professional learning formats include discipline-specific Professional Learning Communities and collaborative teams, both emphasizing improved instructional practices and student outcomes, while a small proportion reported providing other forms of support. This distribution indicates a strong focus on structured, collaborative, and subject-specific PDs.

8. How do districts within your region ensure that all students have equitable access to high quality math instruction?

Response	N = 21	Percent
Use of state/local assessment data to identify and address achievement gaps	15	71%
Differentiated instruction and support for diverse learners	11	52%
Curriculum evaluation for effectiveness as measured by state/local assessments	10	48%

Advanced mathematics courses available to all students	9	43%
Universal screening for mathematics	9	43%
Transitional mathematics coursework (high school only)	8	38%
Other	1	5%

The most frequently reported strategy for promoting equitable mathematics instruction was the use of assessment data to identify and address achievement gaps, followed by differentiated instruction and curriculum evaluation based on assessment results. Fewer districts emphasized expanding access to advanced mathematics courses, implementing universal screening, or providing transitional mathematics options. Overall, the findings indicate that data-informed and instructional strategies are common, while opportunities for advanced and transitional learning appear less consistently prioritized.

9. In what ways do districts within your region support students from underrepresented groups?

Support for underrepresented students	N = 21	Percent
Targeted interventions (MTSS)	16	76%
Multilingual services	14	67%
Accommodations (IEP/504)	13	62%
Acceleration, gifted, or enrichment programs based on mathematics assessment scores	12	57%
Culturally relevant resources	5	24%
Other	1	5%

The most frequently reported supports for underrepresented students were targeted interventions and multilingual services, followed closely by accommodations and enrichment opportunities. Culturally relevant resources were cited less often, and few respondents indicated other forms of support. Overall, the data suggest that instructional and programmatic interventions remain the primary means of addressing underrepresentation, while culturally responsive practices are less systematically implemented.

Reponses from administrators of educator preparation program at IHEs.

1. How would you describe the level of preparation of teacher candidates for postsecondary mathematics coursework?

Teacher candidate math	n	Percent
Minimally equipped: Teacher candidates have basic math knowledge, but struggle with a number of necessary skills	8	42.1%
Somewhat prepared: Teacher candidates have a foundational understanding of math concepts and skills in some of the necessary areas.	7	36.8%
Extremely well-prepared: Teacher candidates are highly knowledgeable in math content and necessary skills	2	10.5%
Well-prepared: Teacher candidates have strong math content knowledge and the necessary skills	2	10.5%

Most administrators at IHEs rated teacher candidates as either minimally equipped (42.1%) or somewhat prepared (36.8%) for postsecondary mathematics coursework, highlighting concerns about foundational content knowledge and skill readiness. Only a small proportion (21%) considered candidates to be well or extremely well-prepared. This suggests a need for strengthening math preparation in teacher education programs to better align with the demands of postsecondary instruction and high-quality teaching.

2. Does your EPP require candidates seeking a professional educator license endorsed in mathematics (grades 9-12) to take courses specifically in math pedagogy?

EPP math pedagogy requirement	n	Percent
Yes, required for all math teacher candidates.	15	78.9%
My EPP does not offer the mathematics (grades 9-12) endorsement.	4	21.1%

A large majority of respondents (78.9%) indicated that their educator preparation program (EPP) requires math pedagogy courses for candidates seeking a professional educator license in mathematics (grades 9-12). A smaller portion (21.1%) reported that their EPP does not offer the endorsement. These findings suggest that most programs prioritize pedagogical preparation for secondary math teachers, though some institutional gaps in endorsement offerings still exist among participating IHEs.

3. Based on your experience do you find there are gaps in mathematical understanding that hinder teacher candidates' success in mathematics courses ?

Gaps in math understanding	N = 19	Percent
Conceptual understanding versus memorization	18	95%
Foundational content knowledge (fractions, ratios, proportions, geometry, functions and graphing, etc.)	17	90%
Problem-solving skills	13	68%
Algebra proficiency	12	63%
Mathematical reasoning and logic	12	63%
Mathematical communication (the correct use of symbols, diagrams, and graphs showing mathematical understanding)	9	47%

The most frequently identified gaps in mathematics understanding were in conceptual understanding and foundational content knowledge, both noted by nearly all respondents. Problem-solving, algebra proficiency, and mathematical reasoning also emerged as common areas of difficulty. Fewer respondents cited mathematical communication, though it remained a notable concern. Overall, the findings point to persistent challenges in connecting conceptual and procedural understanding and in applying knowledge through problem-solving and reasoning.

4. What instructional strategies are most frequently used to deliver instruction in your mathematics grades 9-12 EPP program courses?

Instructional strategies in EPP math course	N = 19	Percent
Direct instruction	14	74%
Problem-based learning	10	53%
Use of technology in math education	10	53 %
Inquiry-based learning	9	47%
Culturally responsive teaching	8	42%
Other	1	5%

The most frequently reported instructional strategy in educator preparation program mathematics courses was direct instruction, followed by problem-based learning and the use of technology. Inquiry-based and culturally responsive teaching were also common but slightly less emphasized. Few respondents identified other strategies. Overall, structured, application-oriented, and increasingly technology-integrated approaches characterize current instructional practices in mathematics EPP.

5. What instructional strategies or interventions have been effective in supporting teacher candidates who struggle with mathematics at the postsecondary level?

Effective math support strategies	N = 19	Percent
Tutoring and peer support (both in-person and online)	16	84%
Just-In-Time remediation (embedded review sessions or modules within courses)	12	63%
Structured pathways and clear math progression (tailored to students' academic and career goals)	7	37%
Technology enhanced learning (adaptive learning platforms, interactive tools, math-based simulations)	5	26%

The most frequently reported strategy for supporting students in mathematics was tutoring and peer support, identified by the large majority of respondents. Just-In-Time remediation was also widely cited as an effective approach. Structured pathways and technology-enhanced learning were mentioned less often but still reflected important supplemental strategies. Overall, these findings highlight the emphasis on personalized and timely academic support, with technology serving as a complementary rather than primary means of assistance.

6. What types of field experiences are required for math teacher candidates at your institution?

Field experience for math teacher candidates	N = 19	Percent
Classroom observations	18	95%
Full-time student teaching	16	84%
Co-teaching experiences	9	47%
Tutoring or small group instruction	9	47%
Other	3	16%

Nearly all respondents indicated that classroom observations and full-time student teaching are key components of field experience for mathematics teacher candidates. Co-teaching and tutoring or small-group instruction were also commonly included, though at lower frequencies. A small number of respondents mentioned other types of field experiences.

7. How does your institution evaluate the effectiveness of its EPP for candidates seeking an endorsement in mathematics?

EPP effectiveness evaluation	N = 19	Percent
Candidate performance on certification exams	17	90%
Student teaching performance assessments	15	79%
Alumni feedback and success rates	8	42%
Employer feedback from hiring schools	5	26%
Other	3	16%

Most respondents indicated that educator preparation program effectiveness is evaluated primarily through candidate performance on certification exams and student teaching performance assessments. Alumni outcomes and feedback from employers were considered less frequently, while only a few mentioned other evaluation measures.

8. What do you believe to be the most significant challenges faced by educator preparation programs in effectively preparing teacher candidates to become high quality mathematics instructors?

Challenges in math teacher preparation	N = 19	Percent
Limited time within coursework to deeply cover mathematics content	14	74%
Insufficient focus on math-specific pedagogy	11	58%
Limited collaboration with PK-12 school leaders	10	53%
Difficulty in aligning preparation coursework with current Illinois Learning Standards for Mathematics	7	37%

Other	5	26%
Variability in faculty expertise in mathematics education	5	26%
Inadequate student teaching experiences	3	16%
Lack of access to high-quality curricular materials for pre-service professional growth development	3	16%

The most frequently reported challenges in mathematics teacher preparation were limited time to address mathematics content in depth and insufficient focus on math-specific pedagogy. Collaboration with PK–12 school leaders was also a common concern, along with difficulties aligning coursework to current state standards. Issues such as inconsistent faculty expertise, inadequate student teaching experiences, and limited access to high-quality materials were cited less often. Overall, the findings highlight a need for stronger integration of content depth, pedagogical focus, and partnerships with schools to better prepare future mathematics teachers.

Appendix B. Codebooks for Participant Feedback

TABLE B1. Codebook for all Discussion Questions during table talks at the summit, showing parent (highlighted) and child codes (indented), and code counts for each.

Code	Count
Assessment	102
Assessment approaches	14
Asset-based approaches	2
Diversity and representation in math problems	1
Games	1
Prioritizing the “right” answer	3
Real-world problems	2
Student strategies	6
Assessment items	6
Item analysis	2
Multiple choice problems	3
Assessment types	12
Individualized assessments	2
Norm referenced vs benchmark vs diagnostic assessment	10
Assessment utility/administration	32
Purpose/understanding of assessments	13
Testing fatigue/scheduling	2
Time constraints	4
Timeliness of assessment data/results	7
Understanding assessment data	9
Data driving instruction	13
District and local assessment use	22
Curriculum-assessment alignment	9
District assessment alignment	3
NWEA MAP	5
Teacher autonomy/flexibility	5
Equity considerations	4
Grading practices	3

State assessment use	15
Backward planning	2
Computerized tests	3
Use of word/story problems	1
State-district assessment alignment	2
Community/parental involvement	**11**
Curriculum	**31**
Adaptation/flexibility	1
Common curriculum	2
District alignment	3
Evaluation	3
Fidelity	3
Learning standards	1
Mapping	3
Math integration	3
Overloaded	1
Skills/concept vs memorization	1
Time constraint	2
Vertical planning	5
Educator preparation	**24**
Comfort with not knowing/learning new things	1
EPP	9
Limited time/no room for additions	3
Prioritizing edTPA	1
Mentors	4
Need for math PCK	4
Need for real-world experience	2
Process of unlearning	3
Strategies and practices	1
Teachers as learners	1
Exemplars or model districts/ROEs	**7**
General	**29**
Common math language	3
Connections to Literacy Plan/ELA	8
Elementary vs High school	8
Lessons from COVID	2
Not a math person	6

Pedagogy	**44**
Big-picture thinking	2
CRA method	1
Class size	2
Diverse ways of thinking	6
Fluency	9
Lack of Fluency	1
Lack of understanding fluency	1
Over-proceduralizing	4
Teaching for fluency	3
Fun and engagement	1
Goal-oriented	1
Instructional differentiation	5
Differentiation practices	1
Differentiation training	0
Let students struggle	1
PCK	4
Teachers as facilitators	9
Teaching for mastery	2
Technology	1
Thinking classrooms	1
Tools vs strategies	2
Professional learning	**106**
External partnerships	10
Curriculum writers	1
Higher Ed partners	4
ISBE support	4
Support from teachers' unions	2
In-service teachers	12
Admin/Co-teacher observations/evaluations	6
Professional learning approaches	24
CRTL standards	1
Enculturation	3
Fill the gaps	1
Instructional practices vs content	3
Shift to universal practices	2
Teacher PCK	9

Teachers as learners	2
Teachers as partners/decision makers	5
Professional learning type	34
Collaboration	11
PLCs	2
Paired teachers	5
Instructional coaching	8
Job embedded PD/hands-on	4
Mentors	3
Microcredentials	1
Modular PL	2
Numeracy hubs	1
SEL training	3
Train-the-trainer	2
Within grade level	1
Professional learning utility/administration	40
Admin PCK	7
Admin capacity	3
Continuity	1
Equitable access	3
Funding	8
Inside school/contract hours	4
PD-curriculum alignment	1
ROE/district/school alignment	3
Stipends	1
Support indentification	8
Supports for new/ongoing learning	5
Tangible/actionable takeaways for implementation	1
Time constraint	5
Questions from participants	**34**
Resources	**2**
School/district operations/culture	**23**
State mandates	**2**
Student attitudes	**2**
Student learning	**3**
Teacher attitudes	**8**
Anxiety	1

Confidence	2
Open to new ideas/methods	2
Poor mental health	1
Teacher workload/responsibilites	**8**
Planning	2
Planning for student needs	2
Versatility of teachers	3

The Summit

TABLE B2. Codebook for Discussion Question 1.1, showing parent (highlighted) and child codes (indented).

Assessment
Assessment approaches
Student strategies
State assessment use
Backward planning
Curriculum
District alignment
Vertical planning
Educator preparation
Need for math PCK
Exemplars or model districts/ROEs
General
Common math language
Connections to Literacy Plan/ELA
Pedagogy
CRA method
Diverse ways of thinking
Fluency
Lack of understanding fluency
Over-proceduralizing
Teaching for fluency
Goal-oriented
PCK
Teachers as facilitators

Professional learning
In-service teachers
Admin/Co-teacher observations/evaluations
Profesional learning approaches
Enculturation
Instructional practices vs content
Shift to universal practices
Professional learning utility/administration
Admin capacity
Questions from participants
School/district operations/culture
Student attitudes
Student learning
Teacher attitudes

TABLE B3. Codebook for Discussion Question 1.2, showing parent and child codes (indented).

Code
Assessment
Assessment utility/administration
Purpose/understanding of assessments
Community/parental involvement
Curriculum
District alignment
Fidelity
Learning standards
Vertical planning
Educator preparation
Comfort with knowing/learning new things
EPP
Limited time/no room for additions
Prioritizing edTPA
Mentors
Need for math PCK
Need for real-world experience

Process of unlearning
Strategies and practices
Teachers as learners
Exemplars or model districts/ROEs
General
Connections to Literacy Plan/ELA
Elementary vs High school
Not a math person
Pedagogy
Diverse ways of thinking
Fluency
Lack of fluency
Teaching for fluency
Fun and engagement
PCK
Tools vs strategies
Professional learning
In-service teachers
Professional learning approaches
Enculturation
Teacher PCK
Teachers as learners
Professional learning type
Collaboration
Paired teachers
Mentors
Professional learning utility/administration
Admin PCK
Supports for new/ongoing learning
Teacher attitudes
Anxiety
Confidence
Open to new ideas/methods
Teacher workload/responsibilites
Planning
Planning for student needs
Versatility of teachers

TABLE B4. Codebook for Discussion Question 1.3, showing parent and child codes (indented).

Code
Curriculum
Fidelity
General
Lessons from COVID
Professional learning
External partnerships
Curriculum writers
Higher Ed partners
ISBE support
Support from teachers' unions
In-service teachers
Admin/Co-teacher observations/evaluations
Professional learning approaches
Teacher PCK
Teachers as learners
Teachers as partners/decision makers
Professional learning type
Collaboration
PCLs
Paired teachers
Instructional coaching
Modular PL
Numeracy hubs
Train-the-trainer
Professional learning utility/administration
Admin PCK
Admin capacity
Equitable access
Funding
ROE/district/school alignment
Questions from participants

TABLE B5. Codebook for Discussion Question 2.1, showing parent and child codes (indented).

Code
Assessment
Assessment approaches
Diversity and representation in math problems
Real-world problems
Assessment items
Multiple choice problems
Data driving instruction
District and local assessment use
Curriculum-assessment alignment
Community/parental involvement
Curriculum
Evaluation
Fidelity
Math integration
Overloaded
Time constraint
Educator preparation
EPP
Need for math PCK
Exemplars or model districts/ROEs
General
Connections to Literacy Plan/ELA
Elementary vs High school
Not a math person
Pedagogy
Big-picture thinking
Diverse ways of thinking
Teachers as facilitators
Thinking classrooms
Professional learning
In-service teachers
Admin/Co-teacher observations/evaluations
Professional learning approaches
CTRL standards
Fill the gaps

Instructional practices vs content
Shift to universal practices
Teacher PCK
Teachers as partners/decision makers
Professional learning type
Collaboration
PLCs
Instructional coaching
Job embedded PD/hands-on
Mentors
Microcredentials
SEL training
Within grade level
Professional learning utility/administration
Admin PCK
Admin capacity
Continuity
Funding
Inside school/contract hours
PD-curriculum alignment
ROE/district/school alignment
Stipends
Support identification
Supports for new/ongoing learning
Time constraint
Questions from participants
Resources
School/district operations/culture
Teacher attitudes
Poor mental health
Teacher workload/responsibilities
Versatility of teachers

TABLE B6. Codebook for Discussion Question 2.2, showing parent and child codes (indented).

Code
Assessment
Assessment approaches
Real-world problems
Curriculum
Evaluation
Math integration
Skills/concept vs memorization
General
Not a math person
Pedagogy
Technology
Professional learning
External partnerships
Higher Ed partners
ISBE support
Support from teachers' unions
In-service teachers
Admin/Co-teacher observations/evaluations
Professional learning approaches
Teacher PCK
Teachers as partners/decision makers
Professional learning type
Collaboration
PLCs
Instructional coaching
Modular PL
Professional learning utility/administration
Equitable access
Funding
Inside school/contract hours
Support identification
Supports for new/ongoing learning
Tangible/actionable takeaways for implementation
Time constraint

School/district operations/culture
State mandates
Teacher attitudes
Open to new ideas/methods
Teacher workload/responsibilities
Planning for student needs

TABLE B7. Codebook for Discussion Question 3.1, showing parent and child codes (indented).

Code
Assessment
Assessment approaches
Asset-based approaches
Games
Prioritizing the “right” answer
Student strategies
Assessment items
Item analysis
Multiple choice problems
Assessment types
Individualized assessments
Norm reference vs benchmark vs diagnostic assessment
Assessment utility/administration
Purpose/understanding of assessments
Testing fatigue/scheduling
Time constraints
Timeliness of assessment data/results
Understanding of assessment data
Data driving instruction
District and local assessment use
Curriculum-assessment alignment
District assessment alignment
NWEA MAP
Teacher autonomy/flexibility
Grading practices

State assessment use
Backward planning
Computerized tests
Use of word/story problems
State-district assessment alignment
Community/parental involvement
Curriculum
Adaptation/flexibility
Common curriculum
Mapping
Time constraint
Vertical planning
Educator preparation
EPP
Exemplars or model disctricts/ROEs
General
Connections to Literacy Plan/ELA
Elementary vs High school
Pedagogy
Fluency
Over-proceduralizing
Teaching for fluency
Instructional differentiation
Differentiation practices
Teaching for mastery
Professional learning
Professional learning type
Collaboration
Instructional coaching
Professional learning utility/administration
Support identification
Questions from participants
School/district operations/culture

TABLE B8. Codebook for Discussion Question 3.2, showing parent and child codes (indented).

Code
Assessment
Assessment approaches
Prioritizing the “right” answer
Student strategies
Assessment items
Item analysis
Multiple choice problems
Assessment types
Norm reference vs benchmark vs diagnostic assessment
Assessment utility/administration
Purpose/understanding of assessments
Testing fatigue/scheduling
Time constraints
Timeliness of assessment data/results
Understanding assessment data
Data driving instruction
District and local assessment use
Curriculum-assessment alignment
District assessment alignment
NWEA MAP
Teacher autonomy/flexibility
Equity considerations
Grading practices
State assessment use
Computerized tests
Community/parental involvement
Curriculum
Evaluation
Mapping
Educator preparation
EPP
Need for math PCK
Exemplars or model districts/ROEs
General
Connections to Literacy Plan/ELA

Elementary vs High school
Not a math person
Pedagogy
Class size
Let students struggle
Professional learning
External partnerships
Higher Ed partners
ISBE support
Professional learning type
Instructional coaching
Questions from participants
School/district operations/culture
State mandates
Student attitudes
Teacher attitudes
Teacher workload/responsibilities
Planning