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Alabama Numeracy Act: Year 3 Evaluation Report

Prepared for: The Executive Committee of the Alabama STEM Council

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Alabama Numeracy Act: 2024–2025 Evaluation Report

Executive Summary

When students fall behind in math by grade 3, catching up becomes significantly harder. Research shows that early intervention dramatically improves outcomes (Brafford et al., 2023; Clements & Sarama, 2011; Dietrichson et al., 2021; Dowker, 2016; Savane et al., 2023; Yildiz et al., 2025), yet many elementary students lack access to high-quality math instruction and timely support when they need it most. Alabama's Numeracy Act (ANA) represents a statewide commitment to breaking this cycle, ensuring all K–5 students have access to excellent math instruction and the targeted interventions necessary to succeed. The Human Resources Research Organization (HumRRO), along with its partner Mathematica, was awarded a five-year contract in fall 2023 to evaluate ANA implementation in Alabama's full-support (FS) and limited-support (LS) schools.

Research Questions and Core Implementation Priorities

Our ANA evaluation employs two complementary frameworks that create an integrated approach. One framework highlights and provides an inquiry structure that guides what we examine and why: *how* the ANA is working, *for whom* it is working, and *whether* the investment is paying off. The research questions are organized around the following five core areas:

- Is the ANA being implemented well?
- Are students learning more math?
- Are multi-tiered systems of support working?
- Do coaches and professional development make a difference?
- What are the costs and benefits of implementing the ANA?

The second framework highlights 10 core implementation priorities organized into the following three areas, which specify what must be in place for the ANA to succeed:

- Standards-based instruction and materials.
- Data-driven identification and progress monitoring.
- Intensive support and coaching.

Key Findings: Implementation and Fidelity

The ANA is scaling as planned. In SY2023–24, about one in 10 elementary students (10%) attended either an FS or an LS school. By SY2024–25, that number had doubled, such that more than one in five students (20%) now attend a FS or LS school. About half of all stakeholders who participated in the evaluation survey reported being *somewhat satisfied,* and slightly less than 95% were *satisfied* or *somewhat satisfied* with ANA implementation.

Key ANA stakeholder groups generally have a solid understanding of their ANA responsibilities. The Alabama Coaching Framework, developed to help children achieve their full potential through quality instructional coaching, is being implemented with fidelity.

Stakeholders indicated multiple **facilitators** to ANA implementation organized around four interconnected themes: **Systems Leadership**, **School Culture**, **Instructional Practice**, and **Student and Family Engagement**.

Stakeholders also identified significant **barriers** to ANA implementation. These barriers fall into four interconnected themes: **Data and Systems Infrastructure**, **Resource Capacity**, **Teacher Knowledge and Skills,** and **Communication and Consistency.**

Key Findings: Student Math Achievement

We observed improvements in students' proficiency and mean scores on the Alabama Comprehensive Assessment Program (ACAP) in FS, LS, and Non-Designated (ND) schools. The ACAP is administered once at the end of the school year and measures how well students are mastering the knowledge and skills outlined in the Alabama Course of Study Standards. Improvement in ACAP scores suggests that ANA's widespread focus on math instruction has a statewide benefit.

The i-Ready assessment, which is administered three times during the school year (beginning, middle, and end of the year), measures changes in students' math knowledge and skills. In SY2024–25, 459,167 i-Ready assessments were administered to K–3 students across Alabama's schools. While i-Ready performance indicates that students' math skills increased from the beginning to the end of the school year, gaps between FS and LS schools and ND schools are not closing and may be widening.

Teacher certification data suggest that the students in FS schools, those who need the strongest instruction, are receiving instruction from teachers with less education overall. Schools with math coaches did not show meaningfully greater math proficiency than similar schools without coaches. However, coaching may be making a difference for the most struggling schools, though further investigation is necessary to confirm this pattern.

Key Findings: Multi-Tiered Systems of Support

Identifying students' areas of deficiency through appropriate screening is key to providing them with the academic support they need. Currently, no screening assessment data are being collected or stored for kindergarten students or students in grades 3-5. Additionally, there are currently no EMTF-approved screening assessments for students in grade 3. For students in grades 1 and 2, key data points are not being collected to properly evaluate whether screening is being implemented fully and properly

Formative benchmark assessments are key for monitoring student progress toward grade-level proficiency, which further informs where instructional interventions might be needed. Most Alabama schools and students are using EMTF-approved formative benchmark assessments. However, some K–5 schools do not appear to be administering these assessments to all K–5 students.

Principals and teachers at FS and LS schools who participated in the evaluation generally reported that they are complying with the ANA requirement to use EMTF-approved curricula and/or math intervention programs. Similarly, K–5 teachers in FS and LS schools are providing the required 60 minutes of Tier 1 math instruction per day in their classrooms. Although students are being identified as having early numeracy deficiencies via screening assessments, data are currently insufficient to determine whether these students receive the appropriate Tier 2 and Tier 3 services to address these deficiencies. In SY2024–25, schools began recording (via Unified Insights) which students received Tier 3 math interventions.

Math coach and teacher survey results indicate regular implementation of core Multi-Tiered Systems of Support (MTSS) components. Math coaches regularly support MTSS implementation, help teachers use data to differentiate math instruction, and develop materials and make instructional decisions. Nearly all teachers report engaging in behaviors aligned with core MTSS components, including providing daily Tier 1 instruction aligned with content standards.

Key Findings: Professional Development and Coaching

The ANA contributes to strengthening teacher pedagogy in FS and LS schools through systematic professional development and embedded instructional support from building-based math coaches. Most FS and LS school principals reported that the ANA had improved their teachers' math knowledge and pedagogical skills. However, based on our administration of the Mathematics for Teaching Tool (MTT; Ball et al., 2008) in fall 2024 and fall 2025, we did not find evidence of changes in math content knowledge and pedagogical skills year-to-year among the participating teachers.

Of the 198 FS and LS designated schools in SY2024–25, 189 schools (96%) had a math coach. Most of these schools had coaches rated at the Emerging or Developing proficiency level, but relatively few at the Accomplishing level. However, after accounting for school-level math performance, coach proficiency level had no meaningful impact on student achievement outcomes. It is important to note that it is likely too early in the deployment of coaches to draw conclusions about the impact of their proficiency on student achievement.

Key Findings: ANA Cost-Benefit Analysis

A cost-benefit analysis will take place in the final year of the evaluation. In the interim, survey and site visit data indicate that districts and schools do not invest significant financial resources of their own to support ANA implementation. Most principals and LEA staff who participated in the evaluation reported that they do not use local or district funds to implement the ANA. Some school leaders noted that certain components of the ANA, such as the math coaches and summer camps, would not be possible without state funding.

Recommendations

The most significant challenge to evaluating the ANA is the lack of relevant data to gauge program progress and success. The recommendations we present are those we consider of highest priority to support, enhance, and more effectively support ANA implementation.

Recommendation 1: Clarify what support services differ across school designations.
ANA provides support to schools designated as FS or LS, but it is unclear how that support differs based on designation. This matters because we need to:

- ***Evaluate What Works*** – If we do not know what is different between support levels, we cannot determine which services are making a difference. For example, is it the math coach that improves achievement, or is it something else that both FS and LS schools receive or implement?
- ***Understand Designation Changes*** – Schools may move between designations each year. A school may be an ND school one year, become an LS school the next year, and move to an FS school the year after. We need to know (a) what new services an ND school receives when it becomes an LS school, and (b) what services end when an FS school moves to an LS school. Without this clarity, we cannot track what is responsible for changes in achievement.
- ***Align Resources to Needs*** – If many ND schools are using the same supports as designated schools, the ANA's intended differentiation is not happening. If FS, LS, and ND schools receive the same support, it may mean some schools are over-supported or under-supported. It could also mean that the supports are effective everywhere, not just in FS and LS schools. Either way, we need clarity.
- ***What Needs to Happen***
    - *The state needs to document the support services that each designated school receives.*
    - *The state needs to document how resource intensity differs by designation.*
    - *The state needs to document where the service is also available to ND schools.*

Recommendation 2: Require LEAs to provide complete data from screening assessments. Nearly all FS and LS schools use screening assessments to identify students who need math support. However, the data collected from these assessments are incomplete, making it difficult to evaluate whether screening assessments are helping students receive the support they need. This matters because:

- ***We Do Not Know Who Needs Help*** – We lack data on how many students are appropriately flagged to take a screening assessment and are identified as having a deficiency based on that screening assessment.
- ***We Do Not Know If They Receive Help*** – We cannot track whether students identified as needing help receive differentiated instruction (Tier 2 or Tier 3 support).
- ***We Do Not Know If It Works*** – We cannot determine whether students who receive differentiated instruction based on screening results improve in math.
- ***What Needs to Happen***
    - *The state needs to systematically collect relevant scale scores, category assignments (e.g., level, proficient/not proficient), whether a student was administered a screener, deficiency flags, and timing data about when the assessment was administered.*
    - *The state needs to develop a standard data collection protocol that all schools complete after administering screening assessments (to report on the data they collect).*

Recommendation 3: Strengthen coaching data collection and coach proficiency level rubrics. Math coaches account for a large portion of the ANA budget, yet current data are insufficient to determine how they are impacting student achievement. This matters because we need to know:

- ***How Much Time Coaches Spend in Schools*** – We know how many coaches are assigned to schools and if they split time among schools, but we do not know how much of their time is allocated to instructional coaching activities per day and per school.
- ***Whether Coaches Are Effective*** – Current coach evaluations use only three rating categories, and very few coaches receive the highest rating. This compressed range makes it difficult to meaningfully differentiate among coaches. Without greater differentiation, we cannot reliably identify which coaches are most effective and whether coaching quality is related to student achievement.
- ***Whether Coach Proficiency is Being Measured Meaningfully*** – ANA has an existing coach proficiency determination system with defined rating categories and proficiency level guidance, but the current rubric lacks the rigor needed to support that determination. Proficiency levels are not broken down into scored dimensions, and raters are asked only to make notes rather than assign scores. Qualitative information about coaching practices is valuable, but only when collected through a reliable and rigorous process that can be systematically linked to student achievement.
- ***What Needs to Happen***
    - *The state needs to systematically collect data on how coaches allocate their time, including the proportion of time dedicated to instructional coaching activities at each assigned school.*
    - *The state needs to revise the coach proficiency rubric to provide clear and detailed guidance on what distinguishes one proficiency level from another. This information is needed so that raters can identify a coach's overall proficiency, which specific aspects of their practice are strong, and areas for improvement. This level of detail, applied consistently across coaches and raters, would yield reliable performance data to meaningfully differentiate coaches.*

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Alabama Numeracy Act: 2024–2025 Evaluation Report

Chapter 1: Background

Why Math Proficiency Matters

When students fall behind in math by grade 3, catching up becomes significantly harder. Research shows that early intervention dramatically improves outcomes (Brafford et al., 2023; Clements & Sarama, 2011; Dietrichson et al., 2021; Dowker, 2016; Savane et al., 2023; Yildiz et al., 2025), yet many elementary students lack access to high-quality math instruction and timely support when they need it most. Alabama's Numeracy Act represents a statewide commitment to breaking this cycle, ensuring all K–5 students have access to excellent math instruction and the targeted interventions necessary to succeed.

Alabama Numeracy Act

The Alabama Numeracy Act (ANA) addresses the urgent need to improve math proficiency in grades K–5 and to ensure that all students reach grade-level proficiency by the end of grade 5. Rather than a single intervention, the ANA represents a comprehensive system of improvements designed to support educators across all aspects of math instruction. This system comprises five critical pillars that form the foundation for the multiple supports ANA provides. Table 1-1 describes the five pillars and their areas of support.

Table 1-1. ANA Pillars and Their Focus of Support

ANA Pillar	Focus of Support
Math Coaches	Assigns dedicated math coaches to the lowest-performing schools, helping teachers strengthen their instructional practice and build math expertise.
Early Screening	Provides assessment tools to identify struggling students *before* they fall too far behind, enabling timely intervention.
Tiered Intervention	Offers structured support matched to student need: Universal instruction (Tier 1), small-group support (Tier 2), and intensive intervention (Tier 3).
Curriculum Support	Gives K–5 educators access to research-based math materials and evidence-based instructional practices.
Teacher Development	Provides foundational and targeted professional development to help teachers continuously improve their math instruction.

Why This Evaluation Matters

The Human Resources Research Organization (HumRRO), along with its partner Mathematica, was awarded a 5-year contract in fall 2023 to conduct an independent evaluation of the ANA.[1] This independent evaluation is critical: It ensures that legislators, educators, and stakeholders receive credible, unbiased data about whether the ANA is achieving its goals. This report

[1] https://www.alabamaachieves.org/wp-content/uploads/2023/03/OMI_202338_ANA_v1.0.pdf

describes the evaluation activities and findings completed from October 2024 through September 2025.[2]

Research Questions and Core Implementation Priorities

Our evaluation of the ANA employs two complementary frameworks that create an integrated approach. One framework highlights 15 research questions[3] and provides an inquiry structure that guides what we examine and why: *how* the ANA is working, *for whom* it is working, and *whether* the investment is paying off. The research questions are organized around the following five core areas:

- Is the ANA being implemented well?
- Are students learning more math?
- Are multi-tiered systems of support working?
- Do coaches and professional development make a difference?
- What are the costs and benefits of implementing the ANA?

The second framework highlights 10 core implementation priorities identified by the STEM Council, organized into the following three areas, which specify what must be in place for the ANA to succeed:

- Standards-based instruction and materials.
- Data-driven identification and progress monitoring.
- Intensive support and coaching.

Figure 1-1 depicts the alignment between the research questions and core implementation priorities. Appendix A presents the focus of the research questions and the implementation priorities, along with details about what we are measuring.

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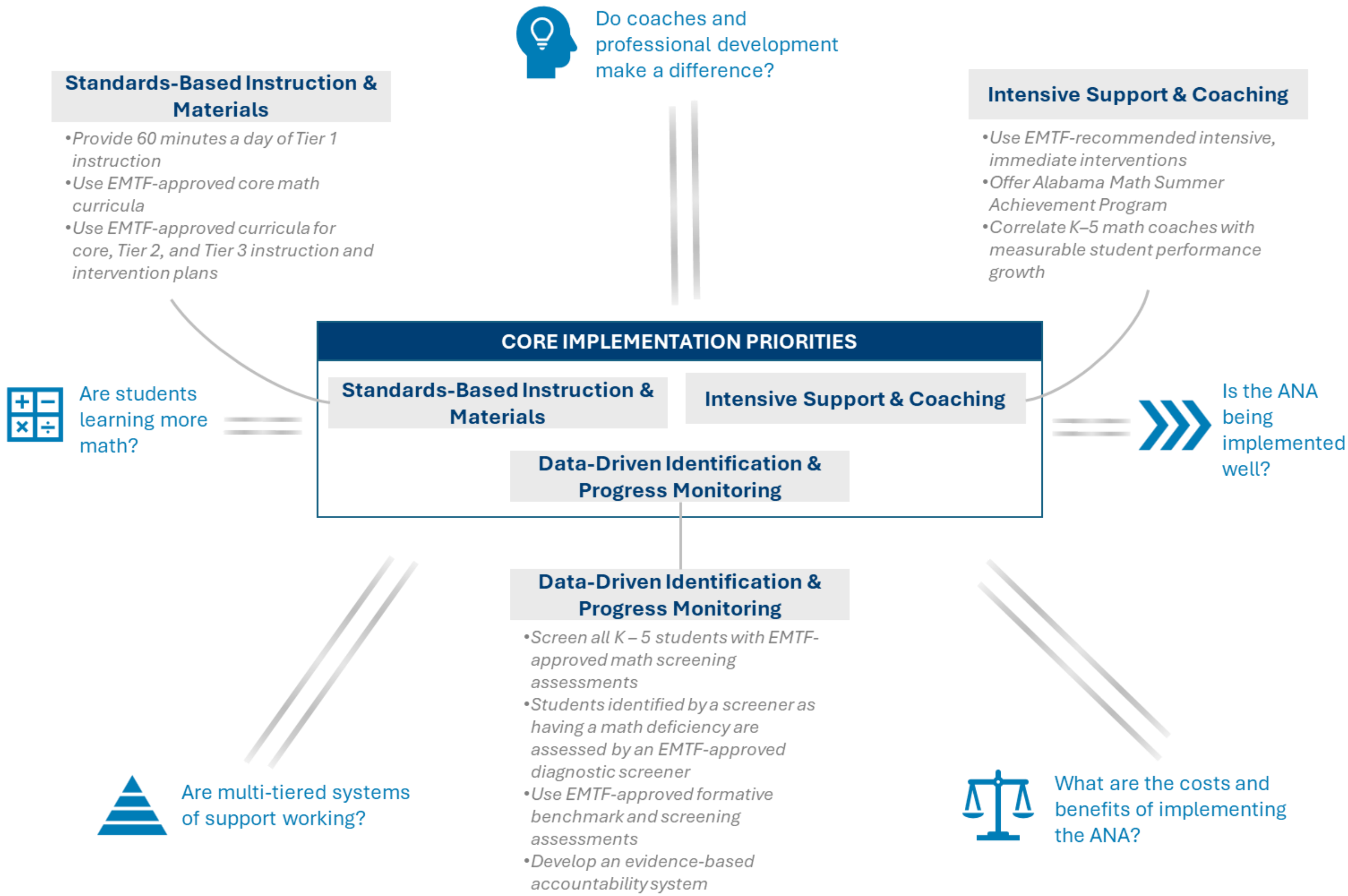
[2] Prior year reports can be found at https://stemcouncil.alabama.gov/wp-content/uploads/2024/02/ANA-Evaluation_Year-1-Annual-Report_Final65.pdf; https://stemcouncil.alabama.gov/wp-content/uploads/2025/02/ANA-Evaluation-Year-2-Annual-Report.pdf

[3] See previous annual reports for an outline and description of all RQs associated with the ANA evaluation. The Alabama State Department of Education will not provide HumRRO with teacher performance/evaluation data, so that Research Question (RQ) cannot be answered. The Instructional Leadership Framework has been replaced by the Alabama Principal Leadership Development System, Senate Bill (SB) 300, ACT #2023-340, enacted in May 2023, so that RQ cannot be answered. Work related to the School Turnaround Academy is not expected to start until school year (SY) 2026–27, so that RQ cannot be answered at this time.

Figure 1-1. Core Implementation Priorities and Research Questions



Research Questions

The 15 Research Questions (RQs), organized by the five core areas, serve as the roadmap for the ANA evaluation and allow us to examine implementation fidelity, student achievement, support systems, coaching and professional development effectiveness, and financial returns. To ensure a rich and meaningful evaluation, we triangulate findings across multiple activities (annual survey, focus groups) and data sources (achievement scores, surveys, focus groups, and cost analyses) to address the research questions. Using a multi-method approach allows us to answer some research questions with confidence, while we can answer others only partially or not at all because of data limitations.

ANA Implementation Fidelity

While this core area addresses six research questions[4], it generally examines the extent to which the ANA reached classrooms the way it was designed to and, if not, what real-world obstacles got in the way. During our evaluation activities, we examine whether schools are doing what is required of them. When they do not, we explore what roadblocks appear, and how they work around them. We ask whether the math coaches are performing their key tasks as intended or if they are inventing their own approaches. Because not everything happens as planned, we investigate what unexpected ripples occur throughout the system (e.g., in schools, across districts, within the state, among educators and families). We compare what should happen to what does happen and, when reality does not match expectations, we explore what external factors are throwing things off course. Finally, we ask stakeholders whether they understand what the ANA is trying to do and how well it is working.

Is the ANA Being Implemented Well?

- Were all processes and activities required by the ANA implemented by stakeholders? What factors facilitated or impeded implementation? How were barriers overcome?
- To what extent is the Alabama Coaching Framework implemented with fidelity in FS and LS schools?
- What positive and negative outcomes emerged that were not anticipated from implementing any ANA component?
- What were the impacts of the School Turnaround Academy?
- To what extent were the relationships between process and outcomes achieved as expected? What external factors impacted the anticipated accomplishments and relationships?
- To what extent are stakeholders aware of and satisfied with ANA implementation?

[4] Per conversation on November 7, 2025, with Dr. Karen Anderson, Director of the Office of Mathematics Improvement, Turnaround Academy design team meetings were suspended, with plans for them to restart and implement at an undetermined time in 2026.

K–5 Student Math Achievement?

This core area addresses one research question. Implementing the ANA only matters if students are learning more math. We examine whether K–5 students are improving in math, focusing on both overall trends in proficiency and gains across years. We investigate the extent to which achievement gains are equal across types of schools, or whether some show larger gains than others. Understanding where gains are strongest and where they are not yet apparent can help inform how the program is refined and implemented in subsequent years.

Are Students Learning More Math?

- To what extent did ANA implementation improve math proficiency of K–5 students? To what extent was improvement consistent across all subgroups? What characteristics of the FS and LS schools make the most progress in improving proficiency scores?

AL-MTSS

The Alabama Multi-Tiered Systems of Support (AL-MTSS) provides universal instruction for all students, targeted support for students who are struggling, and intensive, individualized intervention for students with significant needs. We examine the AL-MTSS core area by answering three research questions. Not all students learn the same way or at the same pace. AL-MTSS is designed to identify students who are struggling and provide them with the help and resources they need before they fall too far behind. We check whether schools implement AL-MTSS as intended, paying special attention to whether students receive the appropriate tiered instruction based on their identified deficiency. We examine the extent to which schools use approved screening and diagnostic assessments to identify students who need help.

Are Multi-Tiered Support Systems Working?

- To what extent is the AL-MTSS implemented in grades K–5?
- To what extent do ratings of AL-MTSS within schools relate to the distribution of students within tiered placements?
- To what extent do the required screening and diagnostic assessments identify students who are subsequently identified as needing tiered services and receive a diagnosis related to math?

Coaches and Professional Development

The assumption is that schools with math coaches and educators who receive specialized professional development for elementary math instruction will see improved classroom instruction and increased student learning. This core area examines five research questions to determine the extent to which this assumption is true. We compare schools assigned a math coach to schools without one. We explore whether schools with coaches who receive higher proficiency ratings see bigger increases in student math achievement. We examine the extent to which teachers are gaining confidence in their math knowledge and teaching skills, whether they are gaining a deeper understanding of math concepts, and if they are trying new instructional strategies.

Do Coaches and Professional Development Make a

- To what extent do FS and LS schools that are assigned a math coach yield better performance than schools that do not have a coach?
- To what extent do performance evaluations of math coaches by principals and regional coordinators in FS and LS schools relate to differences in math achievement?
- What are the status and gains in math knowledge and skills of K–5 teachers in FS and LS schools?
- To what extent do principals' and regional coordinators' ratings of coaches explain variance in principal and coach evaluations of teachers?
- To what extent do ratings of math knowledge and skills of K–5 teachers within FS and LS school account for differences in student performance?

ANA Costs

Decision-makers want to know if Alabama is getting its money's worth from implementing the ANA. We examine this core area by answering one research question. We annually tally all known expenses (e.g., coaches' salaries, professional development, training programs, Math Summer Achievement Program) to determine the overall cost of implementing the ANA. Knowing the overall costs will help decision-makers determine whether students' math achievement improved enough to justify implementing the ANA. Examining the costs of the ANA and benefits to student achievement will help decision-makers determine if the ANA can be justified as a cost-effective solution to improve student learning. We also explore other potential financial benefits of the ANA, such as reduced remediation costs or better long-term economic outcomes for students. Our analysis will help determine whether gains justify the investment and inform subsequent resource allocation.

What are the costs and benefits of implementing the ANA?

- What are the overall costs and actual or anticipated financial benefits of the ANA?

Core Implementation Priorities

The Alabama STEM Council identified 10 core priorities to ensure effective ANA implementation (refer to Figure 1-1). The core implementation priorities include specific practices, assessments, and instructions that must be in place for success. While not specifically covered in the RQs, we investigate the research questions in part by examining whether schools are implementing the related priorities. Collectively, the core implementation priorities describe a coherent system where needs are identified, quality instruction is provided, interventions are implemented when needed, progress is monitored, and teacher capacity is supported.

Schools Included in the Evaluation

Our evaluation includes the schools that Alabama designates as full-support (FS) and limited-support (LS), and often involves analyses comparing the performance of students in FS and LS schools with that of students in non-designated (ND) schools. The ANA differentiates between FS, LS, and ND schools based on student math proficiency:

- **Full-support (FS) schools:** The lowest performing 5% of public elementary schools, plus any K–2 schools in their feeder patterns. These schools receive intensive support that includes professional learning, use of approved intensive support, including approved curricula, and a multi-tiered system of support.
- **Limited-support (LS) schools:** The second lowest percent performing public elementary schools (bottom 6%–25%). These schools receive less intensive support and are required to decrease by 1% every 2 years until the lowest 11%–25% of performing schools are included.
- **Non-designated (ND) schools:** Public elementary schools that provide instruction to students in grades kindergarten through grade 5, or any configuration of those grades, and perform above the bottom 25%. ANA makes no provisions for these schools to receive targeted, intensive support.

Beginning August 1, 2022, the ANA requires that FS and LS schools be designated based on student proficiency at levels 3 and 4 on the state's summative assessment. The number of FS schools will increase by 1% every 2 years until the lowest performing 10% of public elementary schools are included. Similarly, the number of LS schools will adjust accordingly. Figure 1-2 shows the number of schools that were designated FS, LS, and ND in SY2023–24 and how those schools' designations changed in SY2024–25 (among the 858 schools serving grades K–5).

As seen in this figure, the number of schools in each category in SY2023–24 is presented in the first column; for example, 40 FS schools. The second column depicts how those schools changed for SY2024–25; for example, 21 FS schools remained designated as FS in SY2023–24 and in SY2024–25, while 19 moved into the LS category. No FS schools moved from FS to ND between SY2023–24 and SY2024–25. As seen, the number of FS and LS schools increased substantially from SY2023–24 to SY2024–25, and there were considerable shifts in school designations.

Figure 1-2. Changes in School Designations Between SY2023–24 and SY2024–25

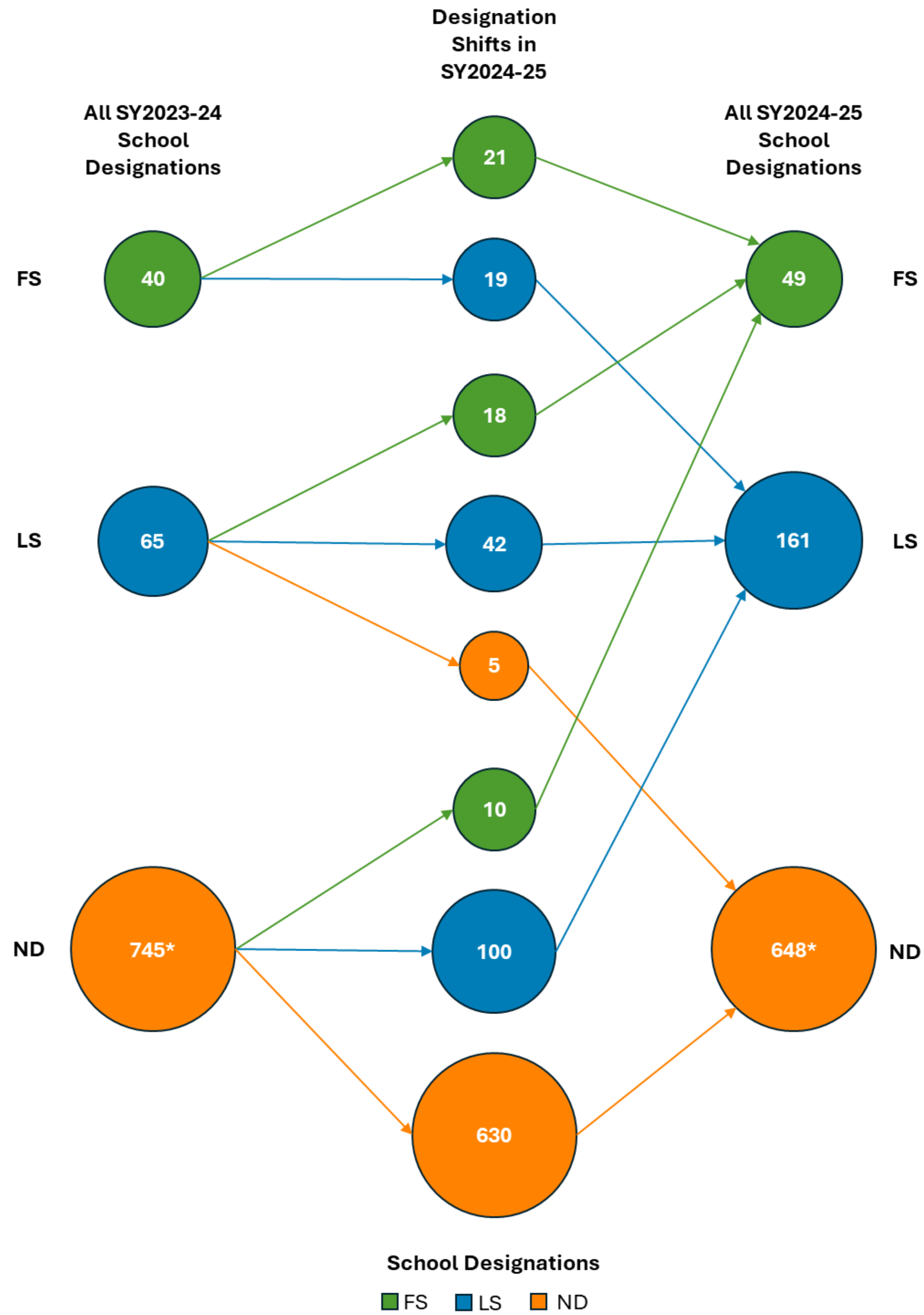


Figure Read*:* There were 40 schools designated as FS in SY2023–24. Of those 40, 21 were designated FS in SY2024–25, 19 were designated LS, and 0 were ND. In total, there were 49 designated schools in SY2024–25, which indicates the FS group increased from 40 to 49 schools.

Note. * denotes each year there were some changes among schools regarding whether they served K–5 students (e.g., some SY2023–24 schools closed in SY2024–25). These types of changes occur only in non-designated schools and are omitted from the diagram. However, they are partially responsible for the overall decrease in ND schools between SY2023–24 and SY2024–25.

Chapter 2: Implementation and Fidelity

HumRRO's ANA evaluation during SY2024–25 included administering an annual survey and conducting focus group sessions to gather perspectives from five key stakeholders (i.e., regional coordinators, Local Education Agency [LEA] staff, FS and LS school principals, math coaches, and K–5 math teachers. We gathered data through surveys (winter 2025) and focus groups with three key audiences: parents and students in grades 3–5 (fall 2024) and five stakeholder groups, including regional coordinators, LEA staff, principals, math coaches, and K–5 teachers (spring 2025). We also conducted in-person site visits to a sample of FS and LS schools (fall 2024). Detailed results from the survey are presented in Appendix B, summary findings from the focus groups are presented in Appendix C, and summary findings from the in-person site visits are presented in Appendix D. We highlight major findings from the survey and focus group sessions below.

ANA Implementation Fidelity

- Key ANA Responsibilities
- Alabama Coaching Framework
- Implementation Facilitators and Barriers
- Unintended Outcomes
- Awareness and Satisfaction

Strong Understanding of Key ANA Responsibilities

Most stakeholders in each key group have a solid understanding of their ANA responsibilities. Virtually all stakeholders who responded to the annual survey indicated understanding how to perform their key ANA tasks. They noted having received the necessary training and having access to perform their tasks as intended. Our site visits to FS and LS schools corroborate the survey findings about K–5 math teachers providing tiered instruction. Our observations indicate tiered instructional practices across classrooms. Teachers implemented structured math blocks that began with number talks, then moved to main lessons and station rotations. The only tasks noted by the stakeholders that they did not fully understand or perform involved the fractional reasoning screening assessment, which will not become operational until SY2025–26.

Coaching Framework Implemented as Intended

Because Alabama believes that all children will achieve their full potential, the state developed the Alabama Coaching Framework to ensure that goal is accomplished. With the overall purpose of improving outcomes for equitable teaching and learning, the framework (a) provides a structured approach to coaching that supports the professional development of teachers and educational leaders and (b) emphasizes job-embedded coaching to foster growth and achievement for all educators and students. The framework's foundation highlights the positive impact of instructional coaching on teacher knowledge, skills, and student achievement. Without exception across stakeholder groups, almost all annual survey respondents indicated they perform with fidelity the roles and responsibilities outlined in the Alabama Coaching Framework.

Implementation Facilitators and Barriers

Through the annual survey[5] and focus groups, we asked stakeholders to share their perspectives on the ANA aspects that most facilitate its implementation and those that serve as

[5] The annual survey was administered to regional coordinators, LEA staff, principals, math coaches, and K–5 math teachers; it was not administered to parents or students.

barriers to or prevent its implementation. Their input provides insight into best practices to improve ANA implementation and ensure its success.

What's Working: Key Facilitators

Stakeholders indicated multiple facilitators to ANA implementation organized around four interconnected themes: Systems Leadership, School Culture, Instructional Practice, and Student and Family Engagement. These facilitators reveal a cascading foundation in which success at each level builds on and enables success at the level below.

Systems Leadership and Accountability

At the systems level, regional coordinators identified the Depth of Implementation (DOI) process as their primary catalyst for change. This structured framework includes aligned rubrics and systematic classroom observation protocols that regional coordinators track through *Monday.com*[6] and reinforce in monthly meetings. The DOI process provides concrete tools that enable regional coordinators to conduct classroom observations systematically, develop targeted support plans based on observation data, and monitor progress transparently and consistently. By transforming their oversight role into meaningful, school-based support, regional coordinators can ensure that classroom observations are systematic, support is targeted, and progress is measurable and visible.

School Culture and Collaborative Leadership

Within schools, principals emphasized that strong coaching cultures built on trust, partnership, and collaboration form the foundation for all other improvement efforts. A strong coaching culture emphasizes support and professional learning rather than evaluation, and is grounded in growth mindset philosophies in which multiple perspectives strengthen practice. This cultural foundation creates psychological safety and shared ownership, conditions necessary for all other implementation efforts to succeed.

Complementing this cultural shift, math coaches providing collaborative support serve as crucial translators, converting system-level initiatives into actionable classroom work. Math coaches have been instrumental in planning intervention services with teachers, helping staff understand and use student data, and developing intervention plans collaboratively. Math coaches also highlighted the importance of supportive relationships with teachers built through trust and transparency. Building and maintaining these relationships is the most fundamental aspect of successful coaching. Trust and transparency create the conditions in which teachers are willing to take instructional risks and collaborate on instructional improvements.

Evidence-Based Instructional Practices

Teachers identified number sense routines and number talks as concrete, evidence-based practices that provide immediate, tangible instructional. These practices help students think conceptually about numbers, develop mathematical reasoning through discussion, and build confidence in supportive classroom environments. Our visits to a sample of FS and LS schools corroborate these findings. Observations show evidence of tiered instructional practices across

[6] *Monday.com* is a cloud-based project management tool.

classrooms, with teachers implementing structured math blocks that begin with number talks, followed by main lessons and station rotations.

Student and Family Engagement

Students reported strong engagement with interactive math instruction featuring manipulatives, collaborative work, and games. Students consistently noted that they enjoy math games, working with classmates, and using concrete manipulatives such as base 10 blocks, fraction strips, and arrays to visualize math problems. These interactive, hands-on approaches directly engage students, make abstract concepts concrete and accessible, and create positive connections to math learning.

Parents recognized the value of the shift to conceptual understanding and multiple problem-solving strategies. Parents appreciated that this pedagogical approach prepares students with stronger math foundations for the future, addressing the fundamental purpose of math education: developing deep understanding rather than procedural fluency alone.

Interconnected System of Facilitators

Stakeholders' input reveals that implementation facilitators are not isolated best practices, but rather an interconnected system where success at each level builds upon and enables success at the next:

- **At the systems level**, the DOI process provides regional coordinators with concrete accountability tools that make oversight systematic and transparent.
- **Within schools**, this system-level clarity enables principals to shift school culture toward trust-based coaching and professional learning, while math coaches translate system initiatives into collaborative problem-solving with teachers.
- **In classrooms and teacher relationships**, this cultural foundation creates psychological safety where teachers implement evidence-based practices like number talks with fidelity, leading to visible instructional improvements.
- **For students and families**, these classroom improvements result in tangible benefits: students experience math through interactive, hands-on instruction that makes abstract concepts concrete, while parents observe improved engagement and recognize its connection to stronger math foundations.

What is Not Working: Key Barriers

Stakeholders also identified significant barriers to ANA implementation. These barriers are not isolated problems, but deeply interconnected challenges rooted in resource scarcity, systematic misalignment, and capacity constraints that cascade across the entire education system. The barriers identified by stakeholders fall into four interconnected themes: Data and Systems Infrastructure, Resource Capacity, Teacher Knowledge and Skills, and Communication and Consistency.

Data and Systems Infrastructure

Data access, timeliness, and coordination were identified as the major obstacles undermining the entire ANA monitoring and support system. When regional coordinators and principals cannot access timely data and coordinate systems, they cannot fulfill their core accountability responsibilities, and all downstream improvements become reactive rather than proactive.

Who Identified This Barrier and Why It Matters

Regional Coordinators – Identified data access and timeliness as a major barrier. Coordinators are expected to monitor multiple data sources, yet they frequently lack direct access to these databases, or data arrives too late to inform timely instructional decisions. This directly undermines their ability to fulfill their core functions of monitoring implementation and providing targeted support. Without timely data access, all other support strategies become reactive rather than proactive. Regional coordinators also identified district leadership buy-in as a major barrier to ANA implementation.

Principals – Identified administrative burden from multiple software systems and a lack of system coordination as negative unintended outcomes. Principals' primary concern involves the redundancy in data reporting requirements across multiple software platforms. They also cite little coordination coming from the state or district as a negative, unintended outcome, making it difficult to implement ANA.

What this Means for Implementation

These barriers reflect systemic challenges in how data and coordination are managed across levels. Coordinators cannot function effectively without timely data, and principals face inefficiencies from multiple reporting systems without clear coordination from above.

Resource Capacity

Resource constraints (i.e., funding, staffing, and time) represent the most fundamental barriers to ANA implementation. Schools cannot serve all identified students, coaches lack time to perform their core functions, and teachers lack sufficient instructional time.

Who Identified This Barrier and Why It Matters

Principals – Identified insufficient funding and staffing for Multi-Tiered Systems of Support (MTSS) implementation as a barrier. Funding for interventionists is critical, yet funding is not provided for the state-mandated interventionist positions, requiring schools to reallocate existing resources or operate without direct student intervention support. This is foundational because no amount of coaching, curricula, or professional development can overcome the inability to provide intervention services to identified students. It is a resource constraint that undermines the entire system.

Local Education Agency (LEA) Staff – Identified a mismatch between student needs and intervention capacity as a barrier. There are more students who need intensive interventions (Tier 3) than those who only need core instruction (Tier 1). Because the schools' intervention capacity cannot serve all those identified with deficiencies, students with the highest needs are prioritized. This creates an unsustainable system in which schools cannot meet their students' identified needs, despite other facilitators in place. It directly contradicts the purpose of MTSS and forces impossible choices about which struggling students receive help.

Math Coaches – Identified severe time constraints as a barrier. There is not enough protected time during regular school hours to plan, collaborate, and debrief with teachers. Without adequate time, even well-trained, relationship-focused coaches cannot fulfill their core function: conducting collaborative, iterative coaching cycles that drive instructional change.

Teachers – Identified insufficient time for math instruction as a barrier. Even with excellent coaching, clear curricula, and manipulatives, teachers cannot implement new instructional practices if they lack sufficient time for actual math instruction. Time is the most basic resource needed for any teaching.

Significance

These resource-related barriers are deeply interconnected. The shortage of interventionist funding means schools cannot serve all identified students. The lack of protected time for coaches limits their ability to support teachers. Teachers lack the instructional time needed to implement new practices. Together, these constraints create a system where implementation depends on doing more with fewer resources.

Teacher Knowledge and Skills

While teachers have received training in ANA-related instructional practices, many K–5 math teachers lack sufficient knowledge to align their instruction to state math content standards.

Who Identified This Barrier and Why It Matters

Principals – Identified the inability of K–5 math teachers to align instruction to state math content standards as a barrier to effectively implementing the ANA.

Math Coaches – Also identified the inability of K–5 math teachers to align instruction to state math content standards as a barrier to implementing the ANA. They cited teachers' limited familiarity with the state's math standards as the reason they were unable to provide aligned instruction.

LEA Staff – Identified teacher openness to coaching as a barrier. Many K–5 math teachers' lack of openness to coaching is preventing the effective implementation of the ANA.

Significance

This barrier indicates that while teachers may understand how to implement certain instructional practices, they may lack the foundational math content knowledge needed to ensure instruction aligns with state standards. Additionally, not all teachers are receptive to coaching support, which limits the effectiveness of coaching initiatives.

Communication and Capacity

Implementation barriers at the student and family level reveal the importance of alignment and consistency in instructional approaches and feedback practices.

Who Identified This Barrier and Why It Matters

Parents – Identified a mismatch between home and school instructional approaches as a barrier. This barrier directly undermines family engagement in supporting student learning and creates confusion for students. Unlike communication gaps that could be addressed through information, this represents a fundamental pedagogical disconnect that leaves parents unable to fulfill their role as learning partners.

Students – Identified inconsistent or inappropriate teacher feedback practices as a barrier. Students described significant variation in feedback experiences. Some teachers talked to students about their progress every day, while others talked to them once or twice a week. Some students reported that their teachers talked about their grades in front of the whole class. This barrier directly damages students' willingness to engage and their confidence in learning, undermining the foundation for all other learning outcomes.

Significance

These barriers reveal that implementation success depends on consistency and alignment. When instructional approaches differ between home and school, families cannot effectively support student learning. When feedback practices vary significantly across classrooms, students lack consistent messages about their progress, and their confidence is undermined.

Cascading System of Barriers

Like the facilitators, the barriers identified by the stakeholders are deeply interconnected, with challenges at one level compounding across the entire education system:

- **At the systems level**, regional coordinators are held accountable for monitoring implementation, yet they lack timely access to the data needed to do so. They must work with multiple data sources that they cannot directly access, sometimes receiving information too late to inform instructional decisions. This transforms their role from proactive leadership to reactive firefighting. Compounding this challenge, regional coordinators reported that some district leadership has not yet fully embraced the ANA initiative, leaving coordinators without the institutional support needed to drive systematic change.

- **Within schools**, principals recognize the importance of interventionist positions and acknowledge these positions are mandated by state law; however, they are not provided any corresponding funding. This means that schools must choose between reallocating resources from other programs or leaving their most struggling students without direct intervention support. This is not a coaching or curriculum problem, but rather it is a fundamental resource crisis. In addition, many K–5 math teachers lack the knowledge to align their instruction to state math content standards, creating a second layer of structural inability. Together, these barriers mean that even when students are identified as needing intensive support, schools often cannot provide it. This directly contradicts the MTSS that ANA is designed to provide.

- **For intervention and coaching**, LEA staff reported that far more students require intensive interventions (Tier 3) than need only core instruction (Tier 1), yet schools have the capacity to serve only a fraction of identified students. This creates a triage system where only the most acute cases receive help. This is an unsustainable model where success depends on rationing support rather than providing it. Math coaches face severe time constraints that undermine their core function. Collaborative, iterative coaching cycles require planning, observation, feedback, and debriefing, none of which can happen without protected time during the school day. Without this time, even the most skilled, relationship-focused coach cannot produce instructional change.

Additionally, math coaches identified that many K–5 teachers lack sufficient familiarity with state math content standards to align their instruction, a knowledge gap that coaching alone cannot bridge. Beyond coaching, teachers identified the most fundamental resource constraint: insufficient time for actual math instruction. Excellent coaching, clear curricula, and manipulatives mean nothing if teachers lack the basic instructional minutes needed to implement new practices and allow students to engage with math concepts.

- **At home and in classrooms**, two different but equally important barriers emerged. Parents described a fundamental pedagogical disconnect between home and school instructional approaches, leaving them unable to reinforce classroom learning. This suggests a deep misalignment that undermines family engagement. Students experienced inconsistent and sometimes harmful feedback practices. Some teachers provided frequent feedback on progress, while others checked infrequently; some discussed grades publicly, damaging student confidence and willingness to engage. These variations directly undermine students' emotional safety and engagement, both of which are prerequisites for learning.

Unintended Outcomes of Implementation

Implementing a decision or policy can lead to outcomes that are unforeseen or unintended, which may be positive or negative. We gathered stakeholders' perspectives via the annual survey and focus groups on changes resulting from ANA implementation that were not explicitly planned or expected. Stakeholders identified both positive outcomes that have strengthened implementation and negative outcomes that create challenges for students, teachers, and families.

Positive Unintended Outcomes

Stakeholders shared several positive unintended consequences that they believe are beneficial from implementing the ANA. It is important to recognize these consequences as they may inform decision-making and policy formulation to better navigate the ripple effects of implementing the ANA.

Positive Unintended Outcomes

- Elevated perception of math instruction
- Improved student engagement and achievement
- Improved math instruction delivery

Elevated Priority and Status of Math Instruction

One positive unintended outcome from implementing the ANA is the elevated priority and status of math instruction across schools. All stakeholder groups reported that math now receives equal priority to reading.

Who Observed this Outcome

Regional Coordinators – See evidence during their classroom walkthroughs of increased daily math instruction, teachers using approved evidence-based curricula, and student growth on key indicators.

LEA Staff – Perceive that a balanced focus on math and reading has improved the overall educational approach in schools.

FS and LS Principals – See evidence throughout their schools that math matters, from instruction in the classroom to family communications. Schools are experiencing achievement growth, with students leaving lower grades better prepared for higher grade content.

Math Coaches – See evidence of teachers implementing approved evidence-based curricula and increased daily math instruction during coaching cycles and classroom walkthroughs.

Math Teachers – Reported that math is receiving renewed priority equal to literacy.

Significance

This outcome represents a fundamental shift in how schools allocate instructional priority and resources. Before ANA, primary grades often received less attention in math than in reading. The elevation of math to equal status has led to greater time and attention devoted to math instruction.

Improved Student Engagement and Achievement

A consensus across stakeholder groups emerged that implementing ANA has resulted in improved student engagement and math achievement.

Who Observed this Outcome

Regional Coordinators – See evidence of student growth on key indicators during their classroom walkthroughs.

LEA Staff – Perceive that students are more engaged and motivated, with enhanced skill building resulting from the balanced focus on math and reading.

FS and LS Principals – See evidence that math instruction delivery has improved significantly, and teachers are shifting their focus back to math. Schools are experiencing achievement growth.

Math Teachers – Reported that students are more engaged and excited about math when they use manipulatives and student-centered strategies.

Students – Consistently noted a preference for interactive math instruction, mentioning they enjoy math games, working with classmates, and using manipulatives.

Significance

This outcome suggests that the instructional changes emphasizing conceptual understanding, manipulatives, and interactive practices are resonating with students and producing visible engagement and math achievement gains. This aligns with ANA's fundamental goals of improving math outcomes for all students.

Improved Delivery of Math Instruction

Related to improved student achievement, stakeholders observed improvements in how math instruction is delivered in classrooms.

Who Observed this Outcome

FS and LS Principals – See evidence that math instruction delivery has improved significantly throughout their schools. Teachers are shifting their instructional focus back to math, and visible achievement growth is evident.

Significance

This outcome reflects changes in instructional practices at the classroom level, including shifts toward evidence-based practices such as number talks, manipulatives, and student-centered instructional approaches.

Negative Unintended Outcomes

Implementing a decision or policy can lead to unanticipated, and often undesirable, outcomes. This is particularly common in the early stages of a large-scale initiative, when systems and processes are still being established. Stakeholders shared several unintended negative consequences they believe emerged from implementing ANA.

Negative Unintended Outcomes

- Increased assessment and administrative burden
- Home-School disconnect
- Pressure, anxiety, burnout, and stress
- Principal disengagement from collaborative leadership

Excessive Assessment and Administrative Burden

Multiple stakeholder groups reported that implementing ANA has resulted in excessive assessment and administrative burden that creates counterproductive pressure.

Who Observed this Outcome

LEA Staff – Observed that the breadth of ANA implementation exceeds its depth, such that assessment demands limit or leave insufficient time for instruction.

Math Teachers – Cited major negative unintended outcomes from ANA implementation as the increased administrative burden and frustration using the PowerSchool Unified Insight data platform. They also cited concerns about the increased frequency of assessments and their emotional impact on students.

Students – Often felt rushed for time when learning new math skills, and state assessment testing created additional stress across all grade levels.

Significance

While assessment is important for monitoring student progress and informing instruction, excessive assessment can consume instructional time and create stress for both teachers and students. The administrative burden of multiple systems adds to teachers' workload without apparent benefit to instruction.

Home-School Disconnect

Multiple stakeholder groups reported that ANA implementation is producing a home-school disconnect that limits parent engagement and the assistance parents can provide to support their students' math learning.

Who Observed this Outcome

Teachers – Perceive that ANA implementation is producing a home-school disconnect that limits parents' engagement.

Parents – Cited their inability to support their students' math learning is a major unintended outcome because current methods differ from how they learned math.

Students – Indirectly experience this outcome through the disconnect between home and school instructional approaches, especially when they seek their parents' help with homework.

Significance

This outcome directly undermines family engagement in student learning. When parents cannot understand or support the instructional approaches their children are learning in school, they become less able to reinforce learning at home. This represents a significant challenge to the goal of involving families as partners in their children's education.

Pressure, Burnout, Anxiety, and Stress

Multiple stakeholder groups reported that ANA implementation is placing pressure, burnout, anxiety, and stress on students and teachers.

Who Observed this Outcome

Math Coaches – Agreed there is inconsistent quality in ANA implementation and reported experiencing pressure related to implementation demands.

Students – Shared that they feel stress from time pressure, excessive assessment, and inconsistent feedback practices. State summative assessment testing created additional stress across all grade levels.

Teachers – Experience increased administrative burden and frustration, creating stress from implementation demands.

Significance

While some pressure can motivate improvement, excessive pressure can lead to burnout and reduce educator and student morale. This outcome suggests that implementation demands may be outpacing available resources and support systems, creating unsustainable conditions.

Principal Disengagement from Collaborative Leadership

Two stakeholder groups reported a concerning, unintended negative outcome: principal disengagement from collaborative leadership.

Who Observed this Outcome

Regional Coordinators and **Math Coaches**– Noted that some principals view ANA and math coaching as work between the coordinators and coaches rather than a component of collaborative leadership, indicating a concerning divergence from intended collaborative implementation.

Significance

This outcome suggests a misalignment with ANA's intended collaborative implementation model. When principals do not view ANA as part of their core leadership responsibility, the sustainability and school-wide coherence of implementation may be compromised. The coaching framework was designed with principals as essential collaborative partners, not as external observers.

Inconsistent and Inappropriate Feedback Practices

Inconsistent and sometimes inappropriate feedback practices were identified as a negative, unintended outcome.

Who Observed this Outcome

Students – Shared that the frequency with which teachers talked to them about their progress varied, with some students indicating their teachers talked to them only when they did poorly on tests, sometimes sharing the information with the whole class. Overall, the frequency and quality of feedback students receive appear to depend on their individual teachers rather than on consistent practices across all schools.

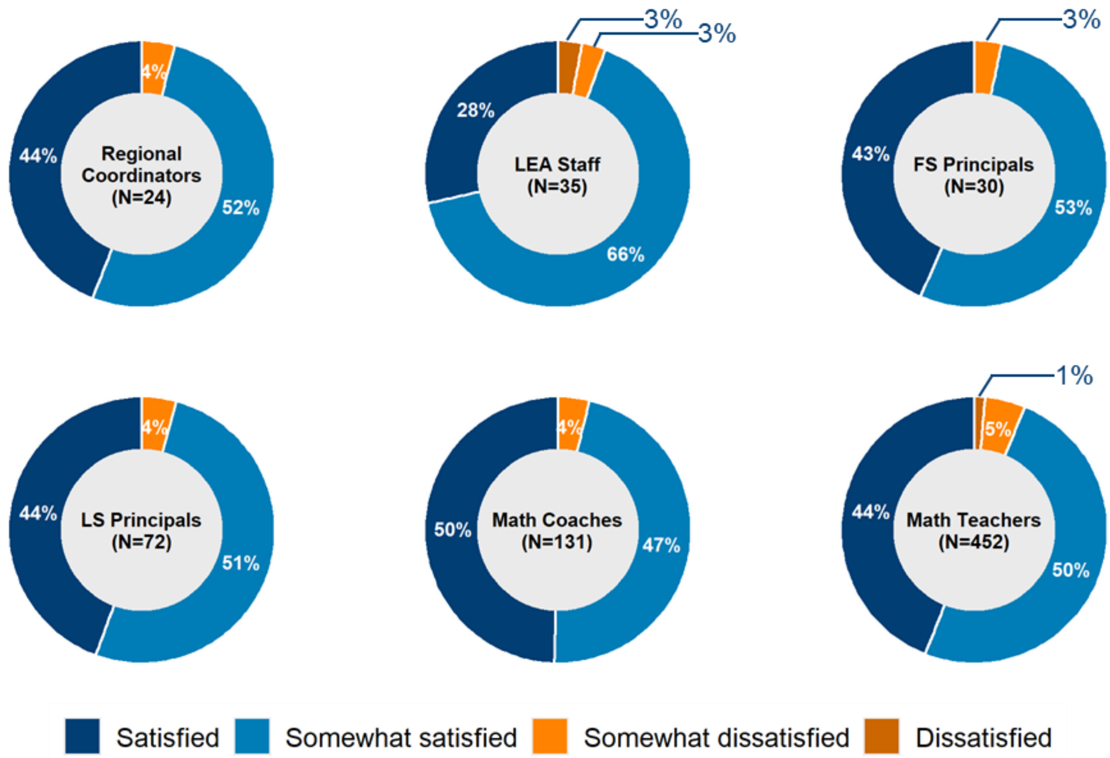
Significance

Inconsistent feedback practices undermine student confidence and engagement. When feedback is infrequent, students lack information about their progress. When feedback is delivered publicly or focuses only on poor performance, it damages students' confidence and their willingness to engage in learning. This outcome suggests a need for professional development around evidence-based feedback practices grounded in growth mindset principles.

Stakeholder Awareness and Satisfaction

Now in its third year, we asked the key stakeholder groups to share how satisfied they are so far with how the ANA is being implemented (see Figure 2-1). Across stakeholders, math coaches reported the highest level of satisfaction with the ANA's implementation, while LEA staff reported the lowest. Overall, about half of all responding stakeholders were *somewhat satisfied,* and slightly less than 95% were *satisfied* or *somewhat satisfied* with ANA implementation.

Figure 2-1. ANA Awareness and Satisfaction by Stakeholder



Note. Percentages may not add to 100% due to rounding.

Chapter 3: Student Math Achievement

The primary purpose of the ANA is to improve student achievement in elementary math, especially in Alabama's lower-performing FS and LS schools, which serve most of the state's struggling students. This chapter discusses student math achievement based on a couple of standardized assessments (Alabama Comprehensive Assessment Program, or ACAP, and Curriculum Associates' i-Ready assessment), Before diving into findings of the standardized assessments, we highlight several important contextual factors important for interpreting the results. Following the discussion of assessment findings, we highlight an important teacher characteristic that may be affecting students' math learning and achievement in Alabama's FS and LS schools. This chapter concludes with a discussion about the effectiveness of ANA's impact on student math achievement.

When examining how students performed on Alabama's math assessments, it is helpful to consider which students attended schools that received ANA support and how that changed over the past year (see Appendix E). Such context helps us interpret our findings about Alabama's elementary students' math learning. For example, if more struggling students attended FS and LS schools, we would expect different patterns than if student populations remained stable.

ANA's Reach

The ANA is reaching more schools and students (see Figure 3-1). In SY2023–24, about one in 10 elementary students (10%) attended either an FS or LS school. By SY2024–25, that number had doubled such that more than one in five students (20%) now attend an FS or LS school. This expansion is intentional as the ANA calls for FS schools to serve the lowest performing 5% of schools, and that target was reached in SY2024–25. The increase in LS schools reflects the ANA's design to gradually expand support to more schools over time. This is important because ANA is scaling as planned. This context helps us understand the denominator when reading about student outcomes.

As designed and intended, ANA is reaching more schools and students.

Figure 3-1. Percent of Students Attending Schools by Designation SY2023–24 and SY2024–25

	SY2023-24	SY2024-25	Change
FS	3.4%	5.5%	▲ 2%
LS	7.5%	16.2%	▲ 9%
ND	89.1%	78.3%	▼ -11%

Note. Change values are rounded.

FS and LS School Student Populations

A key question is how similar or different students attending FS and LS schools are from those attending ND schools. This matters because if FS and LS schools serve students with greater needs (e.g., more English learners [ELs], more students with disabilities [SWDs], more students from higher poverty families), we would expect different outcomes than if they serve typical student populations.

While demographics hold steady, ANA serves students with the greatest needs:

- English Learners
- Students with Disabilities
- Students Experiencing Poverty

Our analysis of the data reveals a mixed picture. The proportion of ELs and SDWs in FS and LS schools remained relatively stable across SY2023–24 and SY2024–25, indicating the ANA served similar populations of students across both years (see Figure 3-2). However, we notice fewer students qualified for free or reduced-price lunch (FRL) in FS and LS schools, as well as in ND schools. This likely reflects a statewide economic shift rather than ANA impact, but it is important to recognize this change as we interpret real and potential trends in students' math achievement. We highlight this shift to clarify that student demographics are stable, making it appropriate for comparing year-to-year, while explaining the FRL decrease to prevent it being misinterpreted.

Figure 3-2. Percent of EL, SWD, and Economically Disadvantaged Students Attending Schools by Designation SY2023–24 and SY2024–25

		SY2023-24	SY2024-25	Change
EL	FS	10.6%	10.3%	0%
	LS	13.2%	14.6%	1%
	ND	10.7%	10.7%	0%

		SY2023-24	SY2024-25	Change
SWD	FS	12.6%	13.7%	1%
	LS	13.2%	15.8%	3%
	ND	15.5%	16.2%	1%

		SY2023-24	SY2024-25	Change
FRL	FS	91.5%	86.0%	-5%
	LS	87.5%	82.9%	-5%
	ND	65.5%	56.9%	-9%

Note. Change values are rounded.

Student Math Achievement

There are multiple ways to evaluate student learning, but for statewide indicators, we must primarily rely on assessment results. Large-scale assessments are standardized so that scores can be compared across schools and districts. This allows student math performance to be compared by school designation (FS, LS, or ND) and academic year. This report, for example, includes test results from SY2023–24 and SY2024–25. Changes in mean scores or in the percentage of students scoring proficient or above on a given assessment within and across the years can be interpreted as changes in overall student learning in math (see Appendix F).

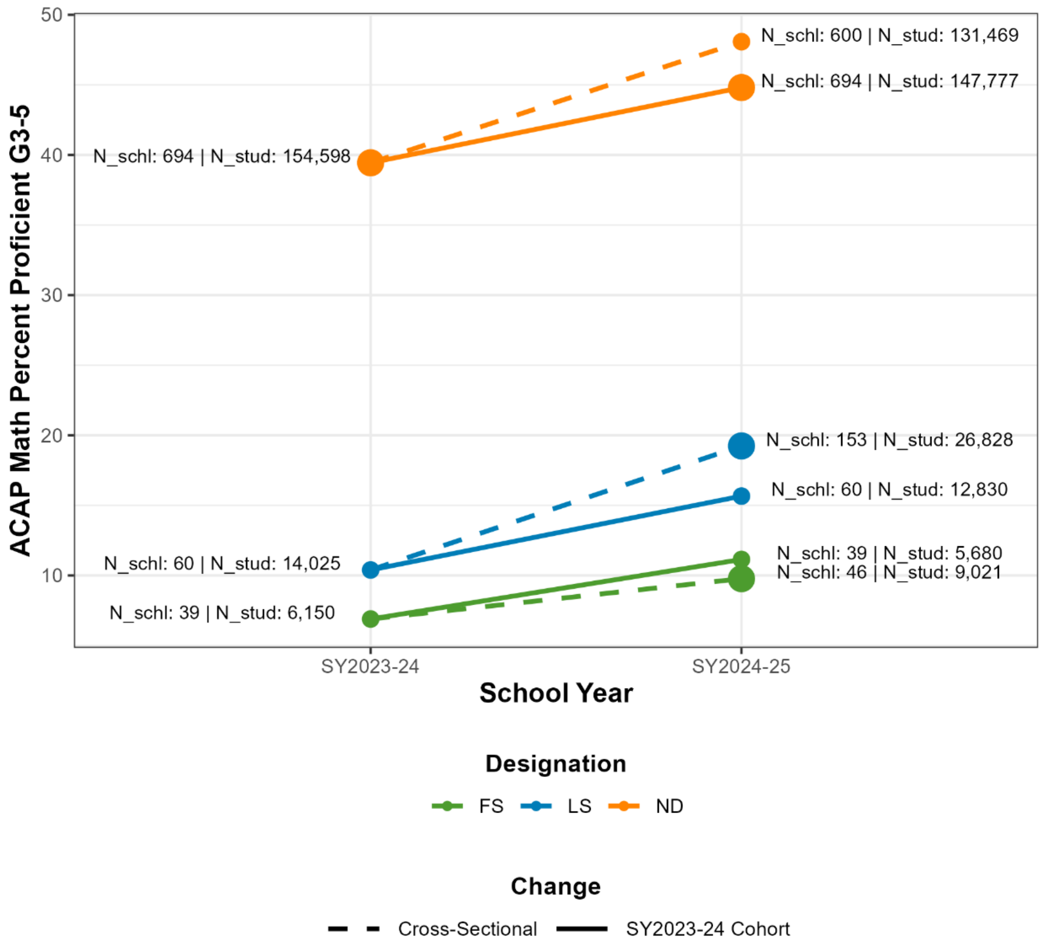
ACAP

Student performance on Alabama's state math assessment, the Alabama Comprehensive Assessment Program (ACAP), is the primary measure we use to determine whether the ANA is working. Student performance on the ACAP is aggregated at the school level and used to determine whether schools are designated as FS or LS. The ACAP is the only census assessment used across all schools. Other assessments might be adopted within a district or used only for certain students. The ACAP is administered to all students in grades 2–5 statewide, making it our best available measure of student math achievement.

When evaluating student math performance, we look at two key indicators: percent proficient and mean score. Percent proficient tells us the percentage of students who scored at the "proficient" level or higher, which is essentially the percentage that met grade-level standards. This is the metric used for school accountability. The mean score tells us the average performance across all students, including those who did not reach proficiency. This measure is especially important for tracking progress among struggling students. Even if a few students reach proficiency in a struggling school, the mean score can show whether those students are making progress. In schools where very few students are proficient, focusing only on the percentage proficient can mask the fact that students are improving. By also looking at mean scores, we can see the full picture of progress.

Figure 3-3 shows that Alabama students made progress in math from SY2023–24 to SY2024–25. We see improvements in the percent proficient and mean scores for students in FS, LS, and ND schools, suggesting that ANA's widespread focus on math instruction has a statewide benefit. However, it is more difficult to interpret findings related to schools designated as FS and LS. Because the number of schools designated as FS or LS increased substantially and many schools changed designations from SY2023–24 to SY2024–25 (refer to Figure 1-2), we cannot assume that the students in designated schools in SY2023–24 are comparable to those in designated schools in SY2024–25. To better understand what happened to schools designated in SY2023–24, Figure 3-3 shows both cross-sectional and cohort results. The cross-sectional data includes all students in designated schools for both academic years, ignoring whether schools were added or changed designation. The cohort results show how student performance for schools designated in SY2023–24 changed for those schools in SY2024–25. The trajectories look quite different. For example, the cross-sectional ND schools appear to have improved substantially, but the ND cohort group had more modest increases, similar to both the FS and LS groups. The differences in slopes for the cross-sectional analyses are very likely the result of increasing the number of schools in the FS and LS groups. The ND has the most positive slope because the number of schools in that group decreased, and the schools re-classified were the lowest performing. Conversely, if we examine the cohort results, we see very similar slopes for FS, LS, and ND schools. This indicates that while math scores in Alabama are improving, there is little evidence that the improvement is greater for designated schools.

Figure 3-3. Change in G3–5 ACAP Math Percent Proficient Over Time by School Designation, Cross-Sectional and by Cohort

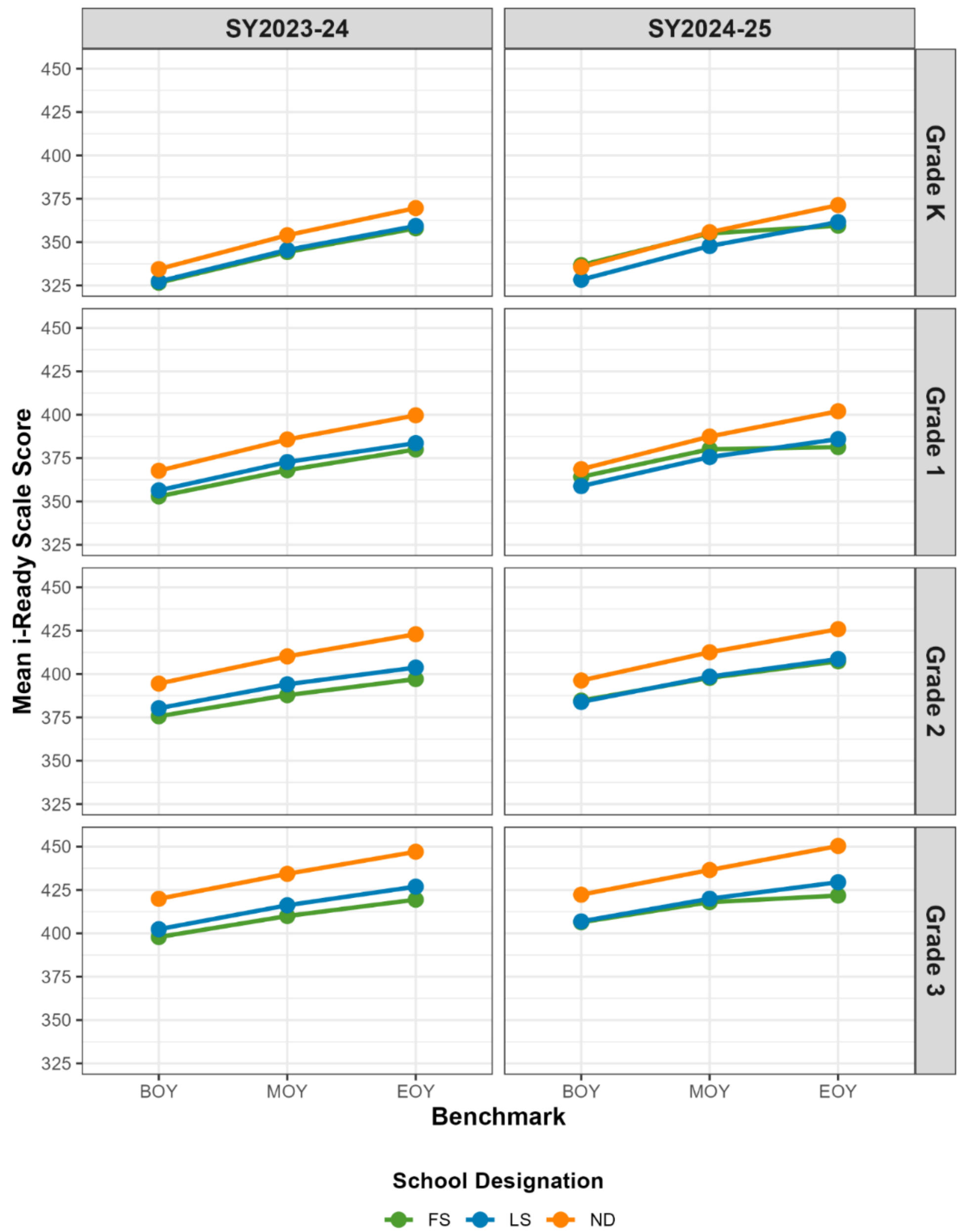


i-Ready

Because kindergarten and first grade students in Alabama do not take the ACAP assessment, the i-Ready assessment is used to track their math learning. The i-Ready assessment is administered three times during the school year (beginning, middle, and end), allowing us to see how students' math knowledge and skills develop. The i-Ready assessment is used as a progress tracker by asking how much math skill a student has and if that skill has increased over the year. The i-Ready mean scale score is the average math skill level for all students in a school or school type, with higher scores indicating stronger math skills. By measuring at the beginning, middle, and end of the year, we can see whether students are making progress throughout the year, not just at the end.

In SY2023–24, 391,121 i-Ready assessments were administered to K–3 students across Alabama's schools. In SY2024–25, that number increased to 459,167, meaning more schools administered the i-Ready assessment to track students' math learning. Looking at Figure 3-4, we see that the line slopes upward from the beginning of the year (BOY) to the end of the year (EOY). This upward slope means that students' math skills increased from BOY to EOY. The steeper the slope of the line, the greater the improvement in students' math performance over the year. This is true for students in FS, LS, and ND schools. When we look at where they start at BOY, students in FS and LS schools begin the year with lower math skills than students in ND schools. This makes sense and is consistent with the intended targeted support, as FS and LS schools are the ones designated for support, given that they serve more struggling students. However, it is concerning that the gaps do not close over the year and may be getting larger.

Figure 3-4. Mean i-Ready Scale Scores Across Benchmark Periods, by Grade and School Year



The pattern of student achievement gaps persisting and not closing reinforces what we saw with ACAP scores for students in grades 2–5. For both K–3 students who took i-Ready and students in grades 2–5 with ACAP scores, overall math performance is improving, so students are learning, but the gap between the most challenged schools and others is not closing. This suggests that simply providing additional resources or support to FS schools is not enough to close achievement gaps. In other words, if the support provided to students is working as intended, we would expect students in the FS and LS schools to catch up with students in the other schools, but that is not happening. It is not surprising that students in FS and LS schools began each year with lower mean performance than students in ND schools (based on BOY scores), but it may be surprising that those differences are maintained across the year. The students in the FS and LS schools are making progress, but not faster than their peers in other schools, which means the gap persists. This finding does not suggest that schools and teachers are doing anything wrong, but rather that students face significant challenges that may require different or more intensive approaches to close the gaps.

Impact of Teacher Certification

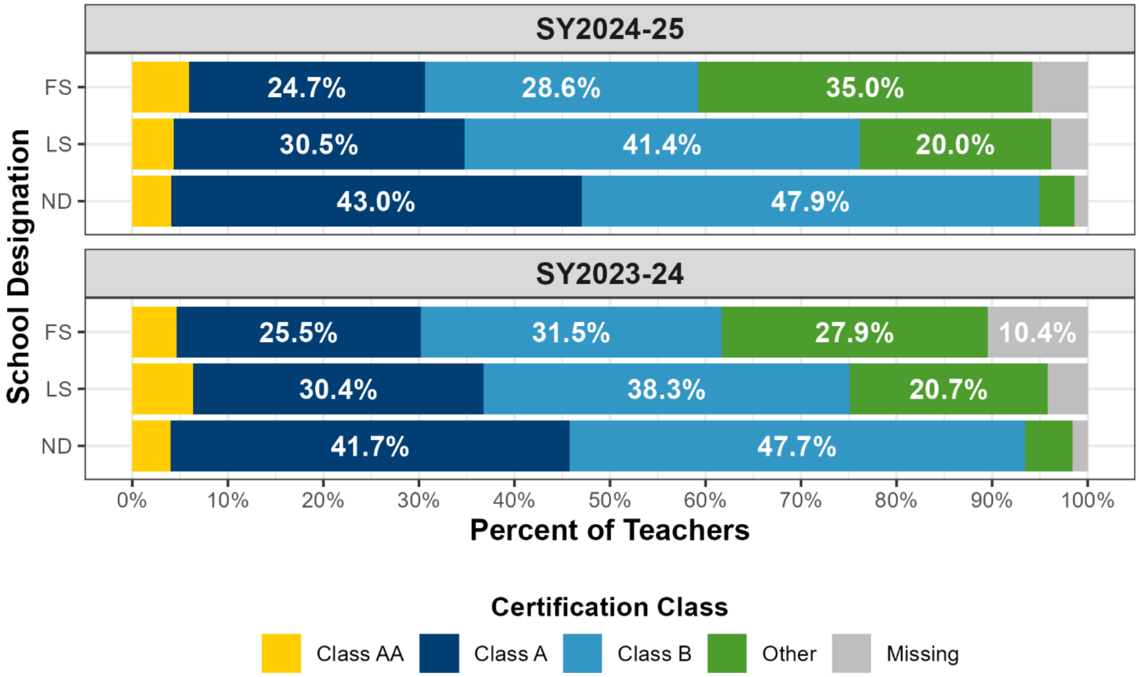
Student achievement is influenced by many factors, among them the quality of instruction. A key indicator of instructional quality is teacher formal education and certification. Teachers with higher levels of formal education and credentials typically have stronger content knowledge and pedagogical skills. Alabama classifies its teachers by the highest level of education they have completed. Teachers with more than a master's degree, such as a doctoral degree, are designated Class AA; teachers with a master's degree are designated Class A; and teachers with a bachelor's degree are designated Class B. Teachers who do not fit any of these classifications are designated Other. It is important to note that these classifications reflect educational level, not subject matter expertise. Most elementary math teachers do not have a specific math credential; instead, they typically hold a general education certification. Because so few teachers have a math-specific credential, we use educational level as a proxy for instructional quality.

Figure 3-5 presents results from our analysis of the proportions of teachers, by certification class, in FS, LS, and ND schools. These results show a striking, but troubling pattern: students with the greatest academic needs are taught by teachers with the least formal education. The FS schools, which have the most academically struggling students, have the lowest percentage of highly educated teachers. About 95% of teachers in ND schools hold Class B or higher certification, meaning most have at least a bachelor's degree. About 75% of teachers in LS schools hold Class B or higher certification. While this is lower than that of ND schools, this percentage still represents a substantial majority of the teachers serving LS schools. Only about 60% of teachers in FS schools hold Class B or higher, meaning that approximately 40% of teachers in the most challenged schools have certifications below the bachelor's level. While it makes sense to have Alabama's students who struggle the most be taught by teachers who are the most highly trained and knowledgeable, those students are instead more likely to encounter teachers with lower levels of education.

The teacher certification findings suggest a significant equity problem. It means that resource allocation, in the form of teacher quality, is not matched to student needs. The students who need the strongest instruction are receiving instruction from teachers with less formal education overall. This pattern did not change appreciably from SY2023–24 to SY2024–25, with the distribution of teacher education levels across FS, LS, and ND schools remaining stable.

The ANA states that the Elementary Mathematics Task Force (EMTF) must recommend educator professional learning focused on foundation math content knowledge, and the State Superintendent of Education must make recommendations to create a K–5 math coach endorsement for teachers holding a valid certificate (as a post-baccalaureate program). The ANA also outlines several qualifications that the math coaches must possess to serve in that role. It appears that the ANA does not address, or at least has not addressed to date, teacher qualifications and improving teacher quality in FS schools.

Figure 3-5. Teacher Certification Class, by School Designation and School Year



Beyond formal education or teacher certification, another dimension of instructional quality is teacher math content knowledge and understanding of state standards. As discussed in the previous chapter, math coaches, who work directly with teachers, identified teacher math content knowledge gaps not just as an area for improvement but as a barrier to ANA implementation itself. Both principals and LEA staff indicated that teachers' familiarity with state math content standards and their ability to align instruction with the math standards need improvement. The problem is not simply that FS and LS schools have less educated teachers, but that many teachers in these schools lack the math content knowledge and familiarity with the standards necessary to tailor or deliver strong math instruction.

Effectiveness of ANA's Coaches on Student Math Achievement

We compared SY2023–24 and SY2024–25 math performance between designated schools that received a coach and those that did not, to examine whether schools with a math coach achieve better student math outcomes (see Appendix G). Under ANA, schools were ranked statewide by the percentage of students in grades 3–5 who scored proficient or higher on the SY2023–24 ACAP math summative assessment. Schools in the bottom 25% of this ranking (where 20% or fewer of their grade 3–5 students scored proficient) were designated as either FS or LS and assigned a state-funded math coach. Separately, the state also expanded coach assignments to some higher-performing schools as part of a broader effort to improve statewide math achievement. This effectively creates two groups of coached schools:

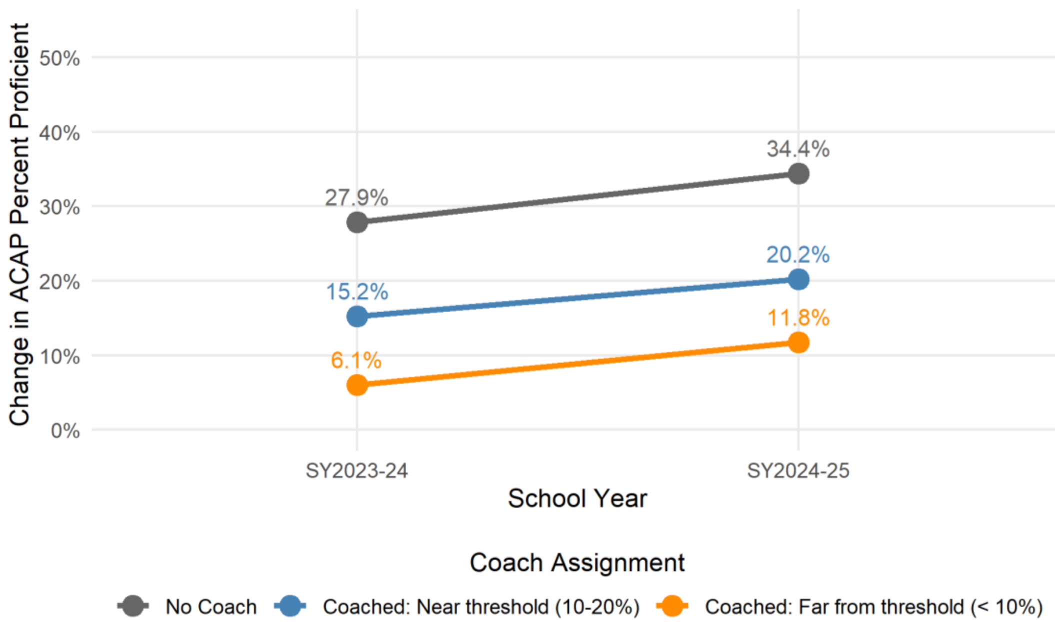
- Whole treated schools: schools that performed at or below the 25th percentile and received a coach.
- Partial treated schools: schools that performed above the 25th percentile threshold but did receive a coach in SY2024–25.

For this analysis, we focused only on the schools that fell at or below the 25th percentile threshold and received a coach, and we compared them to schools above that threshold that did not receive a coach. Because coached schools were selected precisely because of their low math proficiency, finding a fair comparison group required extra care. We tried to mitigate differences in performance among coached and non-coached schools by limiting the non-coached group to schools where fewer than 35% of students scored proficient in SY2023–24, and we carefully matched each coached school with a similar non-coached school based on prior math performance and student demographics.[7] This produced 40 matched school pairs for a total of 80 schools.

What the Data Show

Overall, coached schools did not show meaningfully greater math proficiency than similar schools without coaches. A secondary analysis examining broader trends across all coached and non-coached schools with proficiency below 35% reached the same conclusion.[8] In short, in ANA's first year, we cannot attribute improved math achievement across all coached schools to the coaching program. Figure 3-6 shows that all three groups (coached schools far from the threshold, coached schools closer to the eligibility cutoff [10%–20% proficiency], and non-coached schools), showed modest improvements in proficiency rates between SY2023–24 and SY2024–25.

Figure 3-6. Math Achievement Trends for Coached and Non-Coached Schools (SY2023–24 to SY2024–25)



[7] This is known as a Quasi-Experimental Design (QED) study. With rule-based treatments (e.g., assigning treatment based on a cutoff or threshold), a Regression Discontinuity Design (RDD) is typically the preferred method. However, in the case of ANA, the flexibility and the expansion of treatment resources to non-eligible schools compromise the assumptions required for an RDD. We found that a QED, which pairs treatment and comparison schools on prior achievement and school characteristics, was better suited for this analysis.
[8] We restricted the Difference in Differences (DiD) analysis to comparison schools with a student proficiency rate lower than 35% to make the size of the comparison group more similar to the treatment group.

What This Means for Implementation

The data, as currently collected, can only be used to evaluate the impact of the assignment of a coach. No data are collected regarding how much time coaches spend at a school, the methods coaches use, or reliable evaluation data on coach effectiveness. Current data on the impact of coaching on FS or LS schools is insufficient for making strong recommendations for implementation.

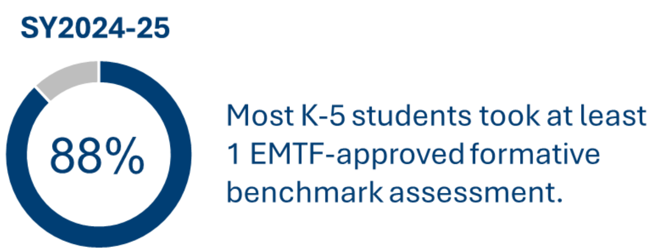
Chapter 4: Multi-Tiered Systems of Support

Raising math achievement overall requires improving it for individual students, each with their own assets and areas for growth. The ANA requires schools to implement an MTSS framework designed to help identify K–5 students' math needs and provide supports and intensive interventions to improve outcomes. We examined formative assessment data, along with various ANA implementation requirements, to identify students' needs and to help FS and LS schools implement core MTSS components and provide support to students.

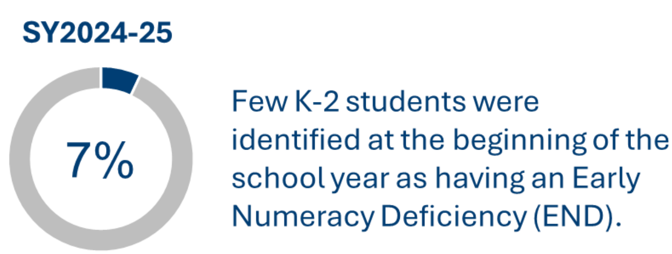
Use of Elementary Mathematics Task Force-Approved Assessments

Alabama established the EMTF to provide, among other things, an annual list of vetted and approved math screening, diagnostic, and formative assessment systems that are valid and reliable for use by LEAs. The ANA requires that all elementary schools use only screening assessments approved by the EMTF. The Alabama State Department of Education (ALSDE) provided HumRRO with a list of EMTF-approved assessments, which fall into three categories: tests that track student progress throughout the year (formative benchmark assessments), early math skills screening assessments (early numeracy screeners), and fraction understanding screening assessments (fractional reasoning screening assessments). We compared this list with outcome data from SY2024–25 to determine how many students in kindergarten through grade 5 took these approved assessments (see Appendix H).

Overall, most students and schools seem to be using EMTF-approved formative benchmark assessments. However, we cannot conclusively say that all K–5 students, nor all schools that serve K–5 students, are using these assessments. In fact, some K–5 students have no formative benchmark assessment records at all, and entire schools have none. This points to either a problem with the storage and retention of formative benchmark assessment records for these students and schools, or to schools that are not properly implementing the formative assessment system.



The screening assessment findings are more concerning because the data infrastructure is not in place to evaluate whether all students are being screened. Currently, no screening assessment data are being collected or stored for kindergarten students or students in grades 3–5. Additionally, there are currently no EMTF-approved screening assessments for students in grade 3. For students in grades 1 and 2, key data points are not being collected to properly evaluate whether screening is being implemented fully and properly. For instance, we do not have any assessment data for students who were administered the Forefront screening assessment; we do not have the Numbers and Operations scores for the i-Ready BOY screening assessment that identifies the students who should receive the interview portion; and we do not have data on which students received the interview portion of the i-Ready screening assessment but were determined not to have an Early Numeracy Deficiency



(END). Without these data, we cannot determine whether all K–5 students are administered an EMTF-approved screening assessment.

Formative Benchmark Assessment

The EMTF has approved three formative benchmark assessments: Exact Path by Edmentum, i-Ready by Curriculum Associates, and Practice Assessments from Progress Learning. Out of 344,568 students in grades K–5 in SY2024–25, 301,787 students (87.6%) took at least one EMTF-approved formative benchmark assessment. The remaining 42,781 students had no record of having taken an approved assessment. These students were spread evenly across all grade levels, with about 12.5% of students in each grade missing approved test records. Of these students, 33,243 took a formative benchmark assessment that was not EMTF-approved, leaving 9,538 students, which represents 2.8% of all K-5 students, for which we have no formative benchmark assessment data at all for SY2024–25.

Among Alabama's 858 schools in SY2024–25, most (844, or 98.4%) had at least one student in grades K–5 who was administered an EMTF-approved formative benchmark assessment. For the 210 FS and LS designated schools, 208 (99.0%) had at least one student in grades K–5 who was administered an approved formative benchmark assessment. In 753 schools (87.8%), at least half of all students took an EMTF-approved formative benchmark assessment. Almost all FS and LS schools (93.3%) had at least half of their students taking EMTF-approved formative benchmark assessments.

However, 14 schools had no students who were administered an EMTF-approved assessment. Of particular concern is that six of the 14 schools have no formative benchmark assessment data at all, suggesting they may not be monitoring their students' progress.

Early Numeracy Screening Assessment

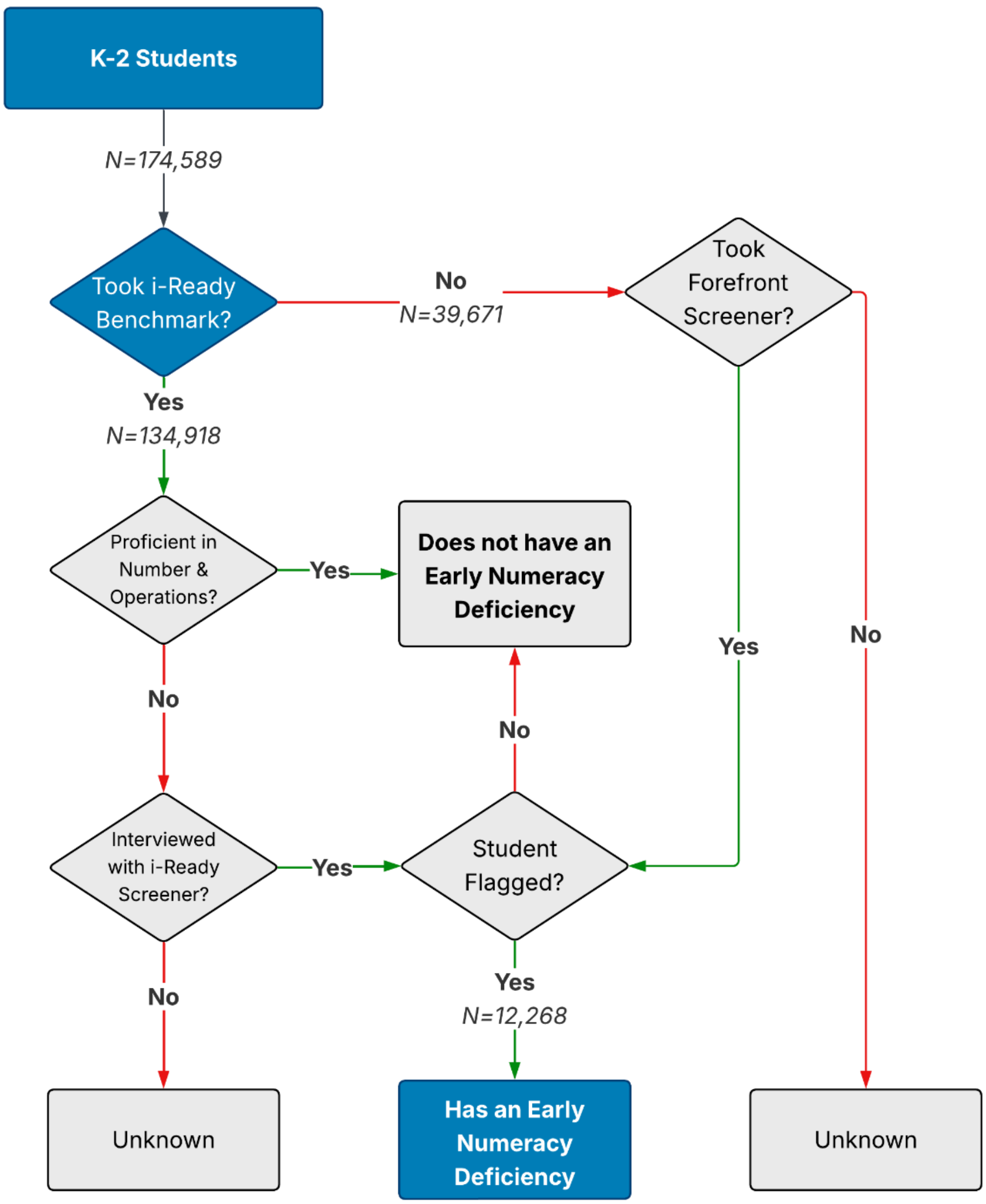
Alabama has two EMTF-approved early numeracy screening assessments for students in grades K–2: the Universal Screener for Number Sense by Forefront Education and i-Ready by Curriculum Associates. The Forefront screening assessment measures students' Number Sense and readiness for math content. The i-Ready math diagnostic assessment is a web-based, adaptive, universal screening tool that measures various math-related skills.

Figure 4-1 depicts how the early numeracy screening assessment process is designed to work, as well as what data are currently being collected on whether the screening assessment process is being implemented with fidelity.

Based on data from ALSDE, we identified 174,589 K–2 students in SY2024–25. However, ALSDE designated SY2024–25 as a pilot year for the Forefront early numeracy screening assessment and could not provide any data related to this assessment. Because Forefront is the only EMTF-approved early numeracy assessment for kindergarten students, we were unable to determine the extent to which kindergarten students were administered an early numeracy screening assessment in SY2024–25.

Alabama administered the Curriculum Associates i-Ready early numeracy screening assessment to students in grades 1–2 during SY2024–25. The i-Ready early numeracy screening assessment comprises two components: a formative benchmark assessment and an interview. Students in grades 1 and 2 are administered the i-Ready formative assessment during the first benchmark period of the year. Then, an in-person interview is conducted with students who do not receive proficient scores on the Numbers and Operations domain of the formative assessment to determine whether they have an END.

Figure 4-1. ANA Early Numeracy Screening Assessment Process



Note. Rectangles represent the start and end points of the process, while diamonds represent decision points during the process. Blue shapes represent the portions of the screener assessment process that ALSDE collected data on in SY2024–25, while gray shapes represent the areas where data were not collected.

During SY2024–25, 134,918 Alabama K–2 students took the i-Ready formative benchmark assessment. However, we have no information on whether the remaining 39,671 (23%) K–2 students were administered the Forefront early numeracy screening assessment (or any other early numeracy screening assessment not approved by the EMTF).

ALSDE staff informed us that they do not retain data on whether students received proficient scores on the Numbers and Operations domain of the i-Ready formative assessment. According to the screening protocol, these students should have received a follow-up interview to determine if they have an END. However, there is a significant data gap because schools were not required to document which students received the follow-up interview; they were only required to document which students were ultimately identified with an END. Thus, we cannot verify how many first and second grade students needed a screening interview, nor how many were administered this screening interview. What we can tell from the data is that by the end of the screening process, 12,268 first and second grade students (10.5%) were identified with an END.

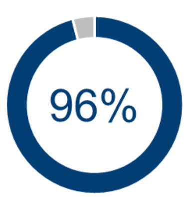
Fractional Reasoning Screening Assessment

Information about the fractional reasoning screening assessment is notably absent from our analysis. According to ALSDE, schools pilot tested the fractional reasoning screening assessment during SY2024–25. This means that schools tried out the assessment to see how it works rather than administer it operationally as a standard requirement for all students in grades 4–5. Because ALSDE did not provide us with any fractional reasoning data, we cannot determine how many schools participated in the pilot, how many students were tested, or how effective the assessment was during SY2024–25.

Use of EMTF-Approved Core Curricula and Materials

Research (Council of Chief State School Officers [CCSSO], 2024; Hartl & Riley, 2021) indicates that the use of High-Quality Instructional Materials (HQIM) significantly impacts student learning outcomes. HQIM allows students to engage more deeply and meaningfully with the grade-level content standards, which is critical for achieving proficiency in grade-level standards.

SY2024-25



Most sampled principals from FS and LS schools reported using EMTF-approved mathematics curricula for core instruction, and reported using approved programs for Tier 2 and 3 intervention.

As noted earlier, we administered surveys to regional coordinators, LEA staff, math coaches, and FS and LS principals and K–5 math teachers to gather their feedback on various aspects of the ANA and how it is being implemented.[9] We specifically asked FS and LS principals and K–5 teachers about their use of EMTF-approved curricula and materials. Overall, virtually all FS and LS principals and teachers are complying with the ANA requirement to use EMTF-approved curricula (see Appendix I). Of the FS principals who responded, only 3% indicated they were *not* using EMTF-approved core curricula, while all reported they used EMTF-approved math intervention programs and curricula for Tier 2 and Tier 3 interventions. For the LS principals, all indicated using EMTF-approved core curricula and less than 4% reported *not* using EMTF-approved math intervention programs

[9] The response rate for FS and LS principals was 86.4%; 33 FS and 79 LS principals responded to the survey. The response rate for FS and LS K–5 teachers was 21.4%; 489 teachers responded to the survey.

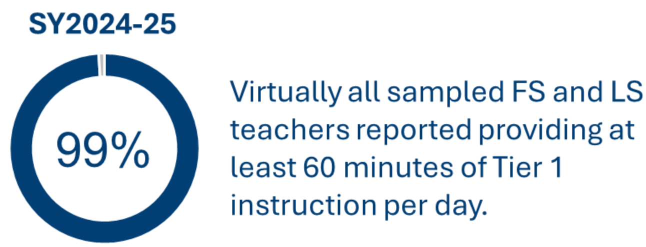
and curricula for Tier 2 and Tier 3 interventions. Of the responding FS and LS K–5 teachers, less than 1% reported *not* using EMTF-approved core math curricula.

Office of Mathematics Improvement (OMI) staff also collected information from the FS and LS schools about their use of EMTF-approved core math curricula.[10] Of the 210 FS and LS schools, 195 schools (92.9%) reported using EMTF-approved core math curricula and 194 schools (92.4%) reported using EMTF-approved Tier 2 and Tier 3 resources. The schools that did not use EMTF-approved core curricula and Tier 2 and Tier 3 resources reported developing plans to do so.

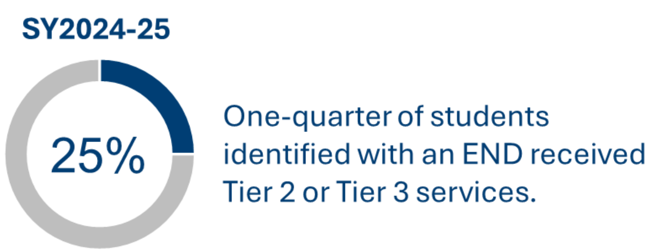
Implementation of Required Instructional Time

Research (Gardner et al., 1983; Kraft & Novicoff, 2024; Martin, 2009) indicates that instructional time is crucial for student outcomes. On average, K–12 public schools operate for under 7 hours a day, over about 180 days a year, amounting to roughly 1,200 hours annually. Schools with the most instructional time offer, on average, five additional weeks of learning per year compared to those offering the least. Over a student's academic career, this additional time can amount to almost 2 years' worth of extra instruction.

The ANA annual survey asked FS and LS K–5 teachers whether they provide 60 minutes of Tier 1 instruction per day. Based on their responses, it appears that virtually all K–5 teachers in FS and LS schools are providing students with the crucial instructional time in their classrooms (see Appendix J). Of the teachers who responded, slightly more than 1% (1.2%) reported that they did *not* provide 60 minutes of Tier 1 instruction per day.



Implementation of Targeted Interventions



A total of 12,268 first and second grade students were identified in SY2024–25 with an END. All students with an END should have received tiered intervention services. However, ALSDE informed us that schools were not required to report whether students received Tier 1 or Tier 2 services in SY2024–25. ALSDE also informed us that all students receive Tier 1 services, whether or not they are identified with an END. Thus, we cannot verify the extent to which first and second grade students with an identified END received intervention services in SY2024–25. Based on schools that chose to report their Tier 2 services data, at least 3,010 (24.5%) of students with an identified END received Tier 2 or Tier 3 services (see Appendix K).

[10] This information was shared with HumRRO staff via conversations with OMI staff in April 2025.

Implementation of Core MTSS Components

All schools are required to implement MTSS along with Problem Solving Teams (PST) to review, monitor, and make recommendations for support based on student needs. A critical aspect of the framework is the organization of MTSS into three tiers that provide a continuum of supports matched to student needs. Each tier increases intensity from universal (all students, Tier 1) to targeted (some students, Tier 2) to highly intensive, individualized supports (few students, Tier 3). Placement within the tiers is intended to be flexible and responsive to students' changing needs and is informed by universal screening and regular progress monitoring. Districts receive MTSS/PST training from ALSDE staff. As part of the ANA, OMI also provides annual support for MTSS through Tier 1 math training and targeted support from regional coordinators to schools.

Math coach and teacher survey results indicate regular implementation of core MTSS components. We examined survey items related to MTSS core activities and behaviors to assess the extent of implementation in FS and LS schools (refer to Appendix L). Math coaches report regularly supporting MTSS implementation. For example, almost all math coaches in FS and LS schools assist teachers with tiered instruction through supporting improvements for Tier 1 instruction (94%) and modeling evidence-based instruction and intervention strategies (93%), which strengthen Tier 2 and Tier 3 interventions. Math coaches also help teachers use data to differentiate math instruction (94%) and develop materials and make instructional decisions (86%).

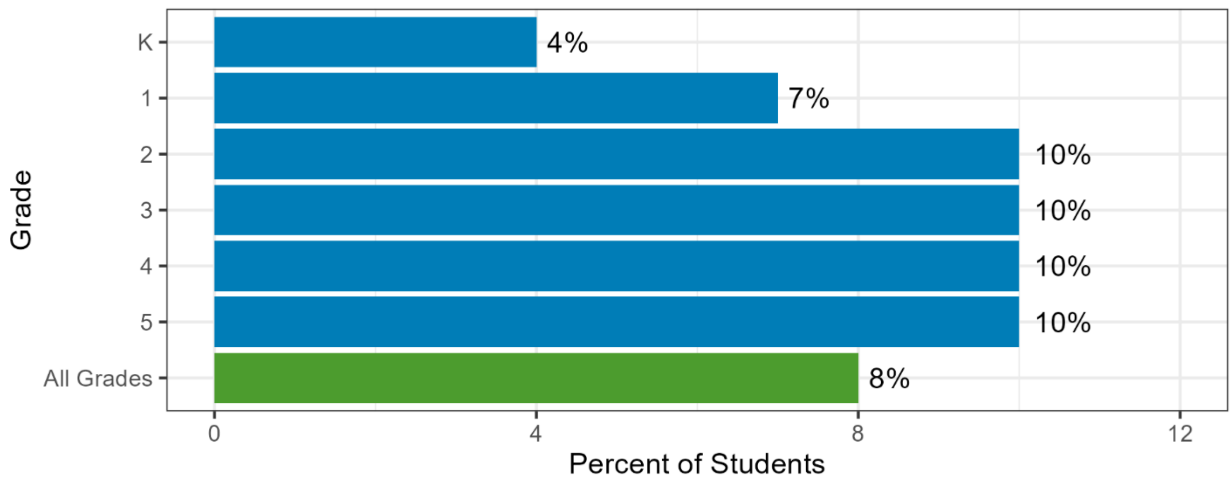
Nearly all teachers report engaging in behaviors aligned with core MTSS components. For example, 98% of teachers report providing daily Tier 1 math instruction aligned with content standards. Teachers report being at least somewhat comfortable providing tiered instruction (96%) and believe that students receive the appropriate tiered supports (92%). Taken together, these behaviors provide evidence of regular use of an MTSS process to support math instruction in FS and LS schools in SY2024–25.

Use of Tier 3 Interventions

In SY2024–25, schools began recording (via Unified Insights) which students received Tier 3 math interventions. In all, almost three-quarters of schools in the state (73%) reported that at least one student received a tiered intervention. For those schools, few K–5 elementary students received targeted Tier 3 math interventions (see Figure 4-2). However, the percentage of students receiving Tier 3 interventions varied across schools, ranging from less than 1% to over 50%. Most schools (75%) reported that fewer than 15% of students received Tier 3 math interventions. The variation in the share of students identified could indicate differences in student needs, MTSS implementation, or reporting procedures between schools.

Students who receive Tier 3 math interventions are intended to be those who may be missing foundational skills and have the highest need for additional support. Across schools with data, students receiving Tier 3 interventions performed worse on the SY2024–25 ACAP math assessment. For example, more than half (53%) of students receiving a Tier 3 intervention scored in the bottom performance level on ACAP, compared to only 17% of students not receiving a Tier 3 intervention. Only 7% of students receiving a Tier 3 intervention had an ACAP level 3 or level 4 score, compared with almost half (47%) of students not receiving a Tier 3 intervention. Together with data on identification rates, these findings generally suggest that schools identify a limited number of students with the highest math needs to support through targeted Tier 3 interventions, in line with appropriate MTSS implementation, though both over- and under-identification were likely in some schools.

Figure 4-2. Students Receiving Tier 3 Math Interventions, by Grade and Overall



Source: 2024–2025 PowerSchool Unified Insights; Alabama Department of Education records.

Note. The figure shows schools with at least one student record with a tier 3 intervention for SY2024–2025.

What This Means for Implementation

Most students and schools seem to be using EMTF-approved formative benchmark assessments; however, the use of EMTF-approved screening assessments is limited, especially for kindergarten and grade 3 students. It is unclear whether this is because the EMTF has not approved a screening assessment (and subsequently notified schools and staff to use it) or because an adequate system for collecting screening assessment data does not exist. Identification of a fractional reasoning screening assessment for grades 4 and 5 was still in progress in SY2024–25. Additionally, there appears to be broad use of EMTF-approved curricula and materials across the FS and LS schools.

The FS and LS schools appear to be providing the required instructional time in math and are implementing core components of MTSS. Schools' records of using Tier 3 interventions generally suggest they are adhering to standard MTSS practices, though consistent data on Tier 2 interventions is not yet available. In general, statewide monitoring systems for MTSS are limited and is based on self-reported data.

Chapter 5: Professional Development and Coaching

Teacher Math Knowledge and Pedagogical Skills

Teachers' math content knowledge is related to gains in math achievement among elementary students (Hill et al., 2005). Thus, one potential way to improve the math proficiency of grade K–5 students may be to strengthen teachers' math content knowledge and pedagogical skills in FS and LS schools. The ANA contributes to strengthening teacher pedagogy in FS and LS schools through systematic professional development and embedded instructional support from building-based math coaches. Trained staff provide intensive professional learning in foundational math content knowledge to all K–5 math teachers, as recommended by the EMTF, covering topics such as Number Sense, Spatial Skills, Algebraic Reasoning, and Mental Computations. Math coaches provide additional school-based instructional support to teachers throughout the school year to build their content knowledge and strengthen their teaching.

Most FS and LS school principals reported that the ANA had improved their teachers' math knowledge and pedagogical skills. When asked to rate the proficiency of their teachers' math knowledge and pedagogical skills on a 10-point scale (1 = least proficient, 10 = most proficient), LS principals rated their teachers' math knowledge and pedagogical skills an average of 6.1 out of 10, and FS principals rated them an average of 5.5 out of 10. These ratings indicate a moderate level of math knowledge and pedagogy skills as perceived by principals.

Based on our administration of the Mathematics for Teaching Tool (MTT; Ball et al., 2008) in fall 2024 and fall 2025, we did not find evidence of changes to math content knowledge and pedagogical skills year-to-year for the teachers who participated, either when comparing performance for all teachers who participated in each year or comparing performance for those teachers who participated in both years (see Appendix M).[11] Many teachers received foundational math training as required by the ANA prior to the first administration of the MTT, so knowledge gains may not be detectable because there are no data from an earlier time point for comparison. In addition to the small number of participating teachers, participation came from only about half of the target schools. While characteristics of schools with responding and non-responding teachers looked similar, only one teacher responded to the MTT in less than half of participating schools (43% in fall 2024, 48% in fall 2025).

Math Coach and Coaching Effectiveness

An important aspect of the ANA is the assignment of math coaches to support schools in improving students' numeracy in grades K–5. Math coaches work directly with teachers to help them understand math content more deeply, use effective instructional strategies, implement math curricula with fidelity, and monitor student progress and adjust instruction accordingly.

How Coaches Are Rated

Based on the *End-of-Year Coach Proficiency Level Meeting Expectations* guidance[12], in FS and LS designated schools, coaches complete a self-assessment of their coaching practices each spring, which is reviewed during a school visit with their mentoring specialist. Regional

[11] Appendix M provides information about the MTT, including administration details and a description of our analysis. Only 792 teachers (22%) responded to the MTT in fall 2024 and 1,024 teachers (31%) responded in fall 2025. A total of 207 teachers responded to the MTT both years.
[12] Guidance document provided by OMI on June 25, 2025.

coordinators distribute a parallel assessment to building administrators. During the May Collaborative meeting, the director, regional coordinator, and mentoring specialist review all evidence, including professional learning requirements, proficiency scale data, mentoring specialist feedback, and administrator input to collaboratively determine each coach's placement across three proficiency levels: Emerging, Developing, or Accomplishing. This placement also determines the coach's Coaching Academy assignment for the next year. If there is disagreement, the AMSTI director makes a final determination based on implementation evidence and mentoring specialist feedback.

Of the 198 FS and LS designated schools in SY2024–25, 189 schools (96%) had a math coach.[13] Table 5-1, shows that most schools in SY2024–25 had coaches rated at the Emerging proficiency level (60%), followed by Developing (34%), with a much smaller percentage rated at the Accomplishing level (6%). When accounting for the proficiency level of the schools' coaches in the previous year, most schools were rated as Emerging (60%) or did not have a coach in SY2023–24 (31%).

Table 5-1. 2-Year Coach Proficiency Level of SY2024–25 FS and LS Designated Schools

SY2023–24 Proficiency Level	SY2024–25: Emerging	SY2024–25: Developing	SY2024–25: Accomplishing	Total
Emerging	55	58	0	113
Emerging 2nd Year	0	1	0	1
Developing	0	5	11	16
Not Applicable	58	0	0	58
Total	113	64	11	188

Table Read: In SY2024–25, 113 schools had coaches rated as Emerging (60%), 64 schools had coaches rated as Developing (33%), and 11 schools had coaches rated as Accomplishing (6%). In SY2024–25, there were 113 schools with coaches rated as Emerging (60%), and 58 schools (31%) did not have a coach in SY2023–24.

Note. Not Applicable indicates that the school was either not designated or did not have a coach in SY2023–24.

How Coach Performance Relates to Student Achievement

We examined whether schools with higher-rated coaches demonstrated stronger math achievement than schools with lower-rated coaches (see Appendix N). After accounting for SY2023–24 school-level math performance, SY2024–25 coach proficiency level had no meaningful impact on student achievement outcomes. However, given that a large proportion of SY2024–25 FS and LS schools were either in their first year with a coach or rated at the Emerging level, it is likely too early to draw conclusions about the impact of coach proficiency on student achievement.

An additional factor that may contribute to the lack of findings relates to the robustness of the coach proficiency rubric and rating process. The rubric is relatively new, and as with any initial evaluation tool, it may not yet be sensitive enough to capture meaningful variation in coach

[13] There were 210 designated schools in SY2024–25; however, this study excludes feeder schools, leaving 198 FS and LS designated schools. See Appendix N for full details on coach proficiency rates, including feeder schools.

proficiency across levels. Additionally, the consistency of ratings across raters has not yet been established, which may introduce variability in the assignment of proficiency levels.

What This Means for Implementation

Principals in FS and LS schools perceive that their teachers' math content knowledge and pedagogical skills have improved since ANA was first implemented. However, the relationship between principals' perceptions and measurable changes in teacher math content knowledge and pedagogical skills is unclear. We will continue to evaluate the relationship between measures of teacher math content knowledge and pedagogical skills and student achievement.

The findings on the relationship between coach proficiency and student achievement reflect the early stages of maturity of the math coaching component of the ANA. Meaningful conclusions about how coach proficiency relates to student outcomes will require more time and greater variation in the coaches' experience levels. Strengthening the reliability and consistency of the proficiency rating process, including improving the data integrity of the ratings, could be a near-term priority to ensure that ratings meaningfully differentiate coaching quality across schools.

Chapter 6: ANA Cost-Benefit Analysis

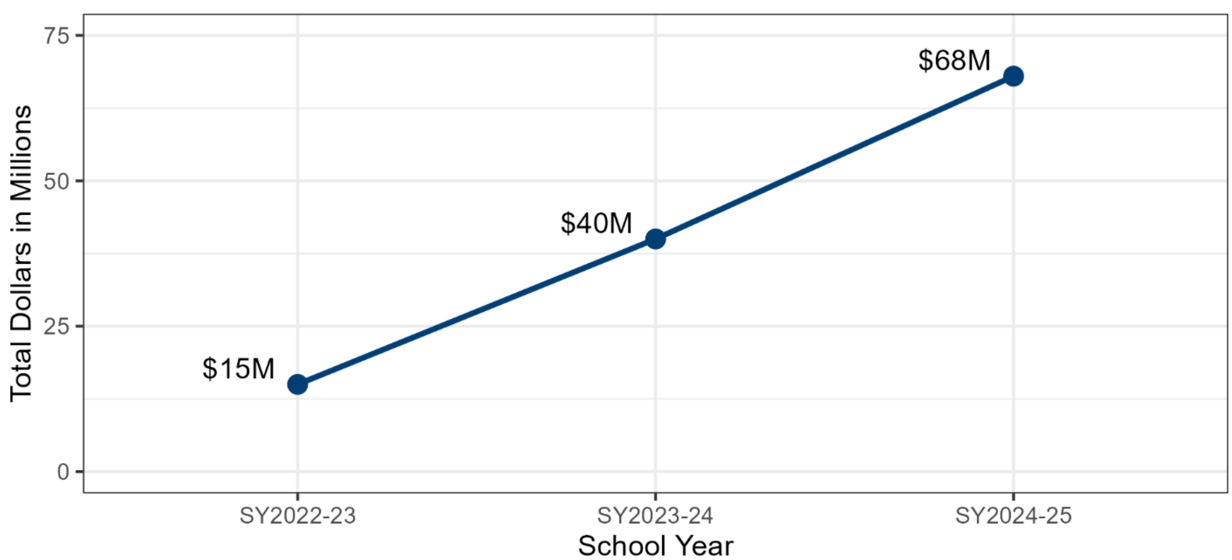
Examining costs and benefits is critical to determining the extent to which the ANA is a cost-effective solution for improving student learning and math outcomes. The initial years of the evaluation involve capturing the various costs and funding streams associated with implementing the ANA. The final year of the evaluation will include a capstone cost-benefit analysis of ANA implementation, providing information on the effective allocation of state resources to inform future policy improvements, the sustainability of education initiatives, and potential efficiencies.

Financial Costs

Our assessment of ANA costs suggests that districts and schools do not invest significant financial resources of their own to support implementation. Based on survey results, most responding LS (90%) and FS (83%) principals, and nearly half (44%) of LEA staff, indicated that no local or district funds are used to implement the ANA (see Appendix O). Of those who reported providing support, some use local funds for manipulatives (7% LS principals, 3% FS principals) and training (3% LS principals, 13% FS principals). Information gathered during our SY2024–25 site visits suggests the ANA is a "cost-neutral" for schools, indicating no additional funds are received, no funds are lost, and no significant investment of local funds for implementation is provided. These school leaders noted that certain components of the ANA, such as the math coaches and summer camps, would not be possible without state funding. When district funds are used, they support summer math camps (21%), math coach incentives (15%), and classroom materials or professional development (12%).

Based on cost data collected since the beginning of implementation, ANA funding increased to $68 million for SY2024–25 (see Figure 6-1). Funding covers the costs of assessments, intervention resources, professional development, math summer camps, and staffing, including math coaches and regional coordinators.

Figure 6-1. ANA Spending SY2022–23 through SY2024–25



Source: Alabama Department of Finance (2023, 2024, 2025).

Cost-Benefit Analysis

A cost-benefit analysis will take place in the final year of the evaluation. We continue to collect data on costs for specific components of the ANA, including math coaches, summer camps, assessments, interventions, and professional development. Benefits data will come from analyses associated with the outcome evaluation, and we will use the estimated impacts of the ANA and its components on math scores to estimate long-term impacts on students. These impacts will be compared to those of similar types of education investments. In addition to direct costs, the study will collect information on indirect costs (teacher and student time) in the evaluation's final year. Finally, any math gains will be translated into benefits (for example, weeks of learning) to help broaden the understanding of ANA outcomes. Additionally, we will draw on previous research on the relationship between K–5 math proficiency and future outcomes, such as high school graduation and lifetime earnings, to discuss the economic value that may accrue beyond the period of this evaluation.

Chapter 7: Program Recommendations

The prior evaluation report concluded that implementation from October 2023 through September 2024 seemed reasonable, given the breadth and depth of implementing the ANA requirements across the state and the ANA's very early stage. The availability of resources, the establishment of infrastructure, and procurement processes slowed implementation and limited ANA's potential to have an immediate impact on student learning. This evaluation report, after an additional year of implementation, represents a more fully implemented ANA. Although the program is still in its early stages, implementation is sufficiently underway to consider recommendations for continuous improvement.

The findings presented in the previous chapters and what they reveal about ANA's progress to date offer important considerations for improving and strengthening ANA implementation going forward. However, the most significant challenge to evaluating the ANA is the lack of relevant data to gauge program progress and success. ALSDE has accommodated requests to provide the data they have, but those data have often been insufficient or incomplete for many of the analyses we need to support conclusions about the impact of ANA. The recommendations we present in this chapter are those we consider to be of highest priority to support, enhance, and more effectively support ANA implementation. The following recommendations focus on collecting highly relevant data to support the evaluation and support a more complete understanding of early math achievement in Alabama.

Recommendation 1: Clarify what support services differ across school designations. ANA provides support to schools designated as FS or LS, but it is unclear how that support differs based on designation. This matters because we need to:

- ***Evaluate What Works*** – If we do not know what is different between support levels, we cannot determine which services are making a difference. For example, is it the math coach that improves achievement, or is it something else that both FS and LS schools receive or implement?
- ***Understand Designation Changes*** – Schools may move between designations each year. A school may be an ND school one year, become an LS school the next year, and move to an FS school the year after. We need to know (a) what new services an ND school receives when it becomes an LS school, and (b) what services end when an FS school moves to an LS school. Without this clarity, we cannot track what is responsible for changes in achievement.
- ***What Needs to Happen***
    - *The state needs to document the support services that each designated school receives.*
    - *The state needs to document how resource intensity differs by designation.*
    - *The state needs to document where the service is also available to ND schools.*

Recommendation 2: Require LEAs to provide complete data from screening assessments. Nearly all FS and LS schools use screening assessments to identify students who need math support. However, the data collected from these assessments are incomplete, making it difficult to evaluate whether screening assessments are helping students receive the support they need. This matters because:

- ***We Do Not Know Who Needs Help*** – We lack data on how many students are appropriately flagged to take a screening assessment and are identified as having a deficiency based on that screening assessment.
- ***We Do Not Know If They Receive Help*** – We cannot track whether students identified as needing help receive differentiated instruction (Tier 2 or Tier 3 support).
- ***We Do Not Know If It Works*** – We cannot determine whether students who receive differentiated instruction based on screening results improve in math.
- ***What Needs to Happen***
    - *The state needs to systematically collect relevant scale scores, category assignments (e.g., level, proficient/not proficient), whether a student was administered a screener, deficiency flags, and timing data about when the assessment was administered.*
    - *The state needs to develop a standard data collection protocol that all schools complete after administering screening assessments (to report on the data they collect).*

Recommendation 3: Strengthen coaching data collection and coach proficiency level rubrics. Math coaches represent a large portion of the ANA budget, yet current data are insufficient to determine how coaches are impacting student achievement. This matters because we need to know:

- ***How Much Time Coaches Spend in Schools*** – We know how many coaches are assigned to schools and if they split time among schools, but we do not know how much of their time is allocated to instructional coaching activities per day and per school.
- ***Whether Coaches Are Effective*** – Current coach evaluations use only three rating categories, and very few coaches receive the highest rating. This compressed range makes it difficult to meaningfully differentiate among coaches. Without greater differentiation, we cannot reliably identify which coaches are most effective and whether coaching quality is related to student achievement.
- ***Whether Coach Proficiency is Being Measured Meaningfully*** – ANA has an existing coach proficiency determination system with defined rating categories and proficiency level guidance, but the current rubric lacks the rigor needed to support that determination. Proficiency levels are not broken down into scored dimensions, and raters are asked only to make notes rather than assign scores. Qualitative information about coaching practices is valuable, but only when collected through a reliable and rigorous process that can be systematically linked to student achievement.
- ***What Needs to Happen***
    - *The state needs to systematically collect data on how coaches allocate their time, including the proportion of time dedicated to instructional coaching activities at each assigned school.*

- *The state needs to revise the coach proficiency rubric to provide clear and detailed guidance on what distinguishes one proficiency level from another. This information is needed so that raters can identify a coach's overall proficiency, which specific aspects of their practice are strong, and areas for improvement. This level of detail, applied consistently across coaches and raters, would yield reliable performance data to meaningfully differentiate coaches.*

Glossary of Terms

Alabama Numeracy Act (ANA). Enacted in 2022 by the legislature of Alabama to implement steps to improve the math proficiency of grade K–5 students and ensure that those students are proficient in math at or above grade level by the end of fifth grade, by monitoring the progression of each student from one grade to another, in part, by his or her proficiency in math.

Beginning of Year (BOY). Refers to the start or early part of a year. In this report, BOY refers to the start of a school year.

Diagnostic Assessments. More detailed assessments are used to understand specifically what a student struggles with (e.g., number sense, fraction concepts, computational fluency) to guide targeted instruction.

Elementary Mathematics Task Force (EMTF). A state-level group of math experts who review and approve curricula, assessments, and instructional materials for us in Alabama schools.

End of Year (EOY). Refers to the period near or at the end of a year. In this report, EOY refers to the end of a school year.

Fidelity. High-fidelity implementation means teachers are using materials, strategies, and coaching exactly as intended.

Formative Assessments. Ongoing, classroom-based assessments (quizzes, observations, student work) are used to monitor student progress and adjust instruction in real time.

Full-support (FS) Schools. The lowest performing 5% of elementary schools in Alabama, based on state math proficiency assessments. These schools receive intensive support, including assigned math coaches, additional resources, and close monitoring.

Limited-support (LS) Schools. Elementary schools performing in the bottom 6–25% on state math proficiency assessments. These schools receive targeted support to improve math proficiency.

Math Coach. A certified educator assigned to FS and LS schools to work directly with teachers to improve math instruction and student outcomes. Coaches provide classroom observations, feedback, professional learning, and collaborative planning.

Middle of Year (MBOY). Refers to the middle point of a year, typically around the 6-month mark. In this report, MOY refers to the middle of the school year.

Multi-tiered Systems of Support (MTSS). A framework for identifying and supporting students at different levels of need: Tier 1: Universal instruction for all students (high-quality daily math lessons). Tier 2: Small-group targeted instruction for students showing early signs of difficulty. Tier 3: Intensive, individualized intervention for students with significant math difficulties.

Non-designated (ND) schools: Public elementary schools that provide instruction to students in grades kindergarten through grade 5, or any configuration of those grades, and perform above the bottom 25%. ANA makes no provisions for these schools to receive targeted, intensive support.

Proxy. A figure or measure that can be used appropriately as a substitute to represent the value of something in a calculation.

Screening Assessments. Brief, standardized tests that are given to all students to identify who may be struggling with math and need additional support. Early identification allows for timely intervention.

Summative Assessments. End-of-year state assessments that measure overall student proficiency and are used to identify FS and LS schools.

References

Ball, D. L., Thames, M. H., & Phelps, G. C. (2008). Content knowledge for teaching: What makes it special? *Journal of Teacher Education, 59*(5), 389–407.

Brafford, T., Harn, B., Clarke, B., Doabler, C. T., Kosty, D., & Scalise, K. (2023). Implementation factors and their influence on student mathematics outcomes. *Learning Disabilities Research & Practice, 38*(1), 5–14. https://doi.org/10.1111/ldrp.12298

Clements, D. H., & Sarama, J. (2011). Early childhood mathematics intervention. *Science 333,* 968–970. Doi: 10.1126/science. 1204537

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

Council of Chief State School Officers. (2024) *A nation of problem-solvers: How state leaders can help every student achieve in math.* https://creativecommons.org/licenses/by-nc/4.0/?ref=chooser-v1

Dietrichson, J., Filges, T., Seerup, J. K., Klokker, R. H., Vinholt, B. C. A., Bøg, M. (2021). Targeted school-based interventions for improving reading and mathematics for students with or at risk of academic difficulties in grades K–6: A systematic review. *Campbell Systematic Reviews, 17,* 1–78. Doi: 10.1002/cl2.1152

Dowker, A. (2016). Factors that influence improvement in numeracy, reading, and comprehension in the context of a numeracy intervention. *Frontiers in Psychology, 7,* 1929. Doi: 10.3389/fpsyg.2016.01929

Gardner, D. P., Larsen, Y., Baker, W., Campbell, A., & Crosby, E. A. (1983). A nation at risk: The imperative for educational reform. In *An open letter to the American people. A report to the nation and the secretary of education*. Superintendent of Documents, Government Printing Office. https://eric.ed.gov/?id=ED226006

Hartl, S. & Riley, C. (March 2021). *High-quality curriculum is a transformation tool for equity.* Association for Supervision and Curriculum Development (ASCD).

Hill, H. C., Schiulling, S. G., & Ball, D. L. (2004). Developing measures of teachers' mathematics knowledge for teaching. *Elementary School Journal, 105*, 11–30.

Kraft, M. A., & Novicoff, S. (2024). Time in school: A conceptual framework, synthesis of the causal research, and empirical exploration. *EdWorking paper* (pp. 22-653). Annenberg Institute at Brown University: https://doi.org/10.26300/1xxp-9c79

Martin, J. (2009, March 11). *Obama talks tough on teachers.* Politico. https://www.politico.com/story/2009/03/obama-talks-tough-on-teachers-019867

Savane, R. P., Willemsen, M. M., Blesses, D., Krøgaard, P., Verner, M., & Nielsen, H. S. (2023). A systematic literature review of math interventions across educational settings from early childhood education to high school. *Frontiers in Psychology, 8,* 1229849. doi:10.3389/feduc.2023.1229849

Yildiz, E., Koca, Ö., & Elaldi, S. (2025). Effectiveness of early intervention programs in developing early mathematical skills: A meta-analysis. *Journal of Theoretical Educational Science, 18*(1), 54-80.

Appendix A: Alignment of Research Questions and Core Implementation Priorities

Research Question Focus	Core Implementation Priority Focus	What Is Measured
Is ANA being implemented well?	Quality instruction Curriculum standards	Fidelity of 60 min/day Curriculum adoption
Are students learning more math?	Data-driven identification Progress monitoring	Student performance Screening accuracy
Are multi-tiered systems of support working?	Targeted intervention Extended learning	Tier placement accuracy Intervention quality
Do coaches and professional development make a difference?	Professional leadership Coaching	Teacher growth Coach effectiveness
What are the costs and benefits of implementing ANA?	Evidence-based accountability Outcomes	Cost per student gain Long-term outcomes

Appendix B: ANA Survey Findings

Background

HumRRO's evaluation of the Alabama Numeracy Act (ANA) includes an annual survey to measure key stakeholders' (i.e., regional coordinators, local education agency [LEA] staff, full- and limited-support school principals, math coaches, and math teachers) implementation of processes and activities. The spring 2025 administration occurred during SY2024–25 and focused on capturing stakeholders' perceptions of the quality and effectiveness of ANA implementation.

Data Collection Method

HumRRO requested and received from ALSDE the names and email addresses of 3,924 individuals in full-support (FS) and limited-support (LS) schools across the five key stakeholder groups. We launched the survey on January 29, 2025, and sent three reminder emails to individuals who had not yet responded to the survey. We closed the Year 3 annual ANA evaluation survey on February 28, 2025.

The survey began with a screening question (i.e., "What is your job title?) that served to branch respondents to their appropriate questions. Initial survey questions asked respondents to respond to several background questions (e.g., length of time working in current role, name of the school and LEA currently working) so we can generally describe the respondent samples. Respondents then answered a series of statements pertaining to their ANA responsibilities: (a) the extent to which they understand their ANA job responsibilities, (b) whether they received training or attended professional development to complete their ANA responsibilities, (c) if they have access to the resources and supports to successfully perform their ANA responsibilities, (d) if they implement their ANA tasks as intended, and (e) if their implementation of ANA tasks leads to achieving ANA's intended outcomes. For each ANA responsibility, respondents also indicated how frequently they implement each key task (i.e., not implementing, less than monthly, monthly, weekly, and daily). Additionally, respondents indicated which factors they believe could be improved or which have prevented them or others from implementing ANA activities/tasks, the biggest challenge they have had implementing the ANA, any positive and/or negative outcome(s) they observed since the ANA has been implemented, and their overall satisfaction with the ANA.

Response Rates and Tenure of Respondents

Table B-1 presents the response rates and the mean number of years each stakeholder type reported being in their current role.

Table B-1. Survey Response Rates and Mean Tenure by Stakeholder Type

Stakeholder Type	Response Rate	Mean Tenure (Years)
Regional Coordinator (n=25)	100.0%	1.6
LEA Staff (n=63)	76.2%	10.0
FS School Principal (n=44)	86.4%	5.3
LS School Principal (n=146)	61.6%	7.0
Math Coach (n=189)	80.4%	1.7
Math Teacher (n=3,457)	21.4%	10.3

Year 3 ANA Evaluation Survey Results

Regional Coordinators

The ANA describes 11 key ANA tasks that regional coordinators must perform. Table B-2 presents the regional coordinators' ANA task ratings regarding their understanding, training received, resources access and intended implementation and outcomes. Across their ANA responsibilities, at least 23 of the 25 (92.0%) regional coordinators indicated they understand all their key ANA job tasks. The task that regional coordinators indicated understanding the least was monitoring the progress of the Alabama Summer Mathematics Achievement Program. Most regional coordinators (88.0%) reported having received training on all their 11 key job tasks. Most regional coordinators (84.0%) also indicated they have access to the resources and support to successfully perform their key ANA job tasks. While most still responded positively, the task that regional coordinators indicated having the least access to resources and various supports involved with implementation of core math curricula and intervention programs (84%). Most regional coordinators (88.0%) perceived they are implementing their ANA tasks as intended and their implementation of the ANA tasks leads to achieving intended outcomes (84.0%).

As seen in Table B-3, all regional coordinators reported completing their key ANA tasks, with most indicating they complete them on a weekly (up to 54.2%) or monthly (up to 66.7%) basis. A few regional coordinators reported completing certain key tasks every day (up to 16.7%).

Table B-2. Regional Coordinators' Key ANA Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

Regional Coordinator Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Supporting implementation of core math curricula and intervention programs.	96.0%	88.0%	84.0%	92.0%	92.0%
Monitoring implementation of core math curricula and interventions/programs.	100.0%	96.0%	88.0%	96.0%	96.0%
Supporting implementation of MTSS, including response to intervention, continually evaluating the effectiveness of instruction, and making informed instructional decisions.	100.0%	96.0%	88.0%	92.0%	96.0%
Monitoring implementation of MTSS, including response to intervention, continually evaluating the effectiveness of instruction, and making informed instructional decisions.	100.0%	88.0%	88.0%	88.0%	84.0%
Supporting implementation of the intensive professional development series on foundational math content knowledge.	100.0%	100.0%	100.0%	96.0%	96.0%
Monitoring implementation of the intensive professional development series on foundational math content knowledge.	100.0%	100.0%	100.0%	96.0%	96.0%
Supporting OMI in monitoring implementation of approved assessments, screeners, and diagnostic assessments.	100.0%	100.0%	92.0%	100.0%	100.0%
Monitoring data collected by AMSTI and LEAs to ensure coaching aligns with school needs and make recommendations for improvement for math coaches.	100.0%	96.0%	88.0%	96.0%	92.0%
Evaluating data collected by AMSTI and LEAs to ensure coaching aligns with school needs and make recommendations for improvement for math coaches.	100.0%	92.0%	88.0%	96.0%	96.0%
Monitoring implementation of Alabama Summer Mathematics Achievement Program.	96.0%	96.0%	92.0%	100.0%	96.0%
Monitoring progress of Alabama Summer Mathematics Achievement Program.	92.0%	92.0%	88.0%	92.0%	92.0%

Note. n=25

Table B-3. Regional Coordinators' Frequency of Implementing Key ANA Tasks

Regional Coordinator Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Supporting implementation of core math curricula and intervention programs.	0.0%	0.0%	29.1%	54.2%	16.7%
Monitoring implementation of core math curricula and interventions/programs.	0.0%	0.0%	29.1%	54.2%	16.7%
Supporting implementation of MTSS, including response to intervention, continually evaluating the effectiveness of instruction, and making informed instructional decisions.	0.0%	8.3%	58.3%	29.2%	4.2%
Monitoring implementation of MTSS, including response to intervention, continually evaluating the effectiveness of instruction, and making informed instructional decisions.	0.0%	4.2%	54.2%	33.3%	8.3%
Supporting implementation of the intensive professional development series on foundational math content knowledge.	0.0%	12.5%	66.7%	16.7%	4.1%
Monitoring implementation of the intensive professional development series on foundational math content knowledge.	0.0%	20.8%	58.3%	16.7%	4.2%
Supporting OMI in monitoring implementation of approved assessments, screeners, and diagnostic assessments.	0.0%	33.3%	41.7%	16.7%	8.3%
Monitoring data collected by AMSTI and LEAs to ensure coaching aligns with school needs and make recommendations for improvement for math coaches.	0.0%	4.2%	58.3%	33.3%	4.2%
Evaluating data collected by AMSTI and LEAs to ensure coaching aligns with school needs and make recommendations for improvement for math coaches.	0.0%	8.3%	62.5%	25.0%	4.2%
Monitoring implementation of Alabama Summer Mathematics Achievement Program.	0.0%	87.5%	8.3%	4.2%	0.0%
Monitoring progress of Alabama Summer Mathematics Achievement Program.	0.0%	87.5%	8.3%	4.2%	0.0%

Note. n=24

Table B-4 presents the regional coordinators' feedback about factors that need improvement or are barriers to ANA implementation. About three-fourths of the regional coordinators cited buy-in from district leadership (76.0%), availability of district/LEA staff to support ANA activities/tasks (72.0%), and district-level infrastructure for implementing ANA (72.0%) as needing improvement for more successful ANA implementation. A similar percentage of the regional coordinators cited buy-in from district leadership as a barrier to ANA implementation (76.0%).

Table B-4. Regional Coordinators' Perceptions of Factors Needing Improvement and Barriers to ANA Implementation

Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from district leadership	76.0%	76.0%
Buy-in from school leaders	56.0%	64.0%
Buy-in from school staff	28.0%	28.0%
Buy-in from teachers	48.0%	44.0%
Availability of district/LEA staff to support ANA activities/tasks	72.0%	44.0%
Availability of staff to support ANA activities (e.g., admin tasks)	32.0%	32.0%
Availability of time to implement ANA activities	40.0%	44.0%
State-level infrastructure for implementing ANA	28.0%	16.0%
District-level infrastructure for implementing ANA	72.0%	48.0%
School-level infrastructure for implementing ANA	40.0%	56.0%
Understanding of district/LEA staff for appropriate use of screening assessment data	48.0%	48.0%
Understanding of school staff for appropriate use of screening assessment data	44.0%	44.0%
Access to student performance data	48.0%	20.0%
Collaboration among ALSDE, OMI, AMSTI, state departments, and LEA	40.0%	12.0%
Communication among ALSDE, OMI, AMSTI, state departments, and LEA	40.0%	12.0%
Alabama Summer Math Achievement Program	20.0%	4.0%
Tools for measuring math coach effectiveness	40.0%	8.0%
Knowledge of each school's ANA-related needs	12.0%	4.0%
School or school team relationships	16.0%	24.0%
Providing tailored support	20.0%	8.0%
Requirement to simultaneously implement multiple initiatives	32.0%	28.0%
Messaging about ANA	20.0%	8.0%
Training provided to regional coordinators	24.0%	12.0%
Training provided to math coaches	12.0%	8.0%
Training provided to math teachers (e.g., monitoring MTSS implementation)	40.0%	44.0%
Other	4.0%	8.0%

Note. n=25

One-third (33.3%) of the responding regional coordinators indicated that buy-in from district leadership is the biggest challenge to successful ANA implementation (see Table B-5).

Table B-5. Factors Perceived as Challenge for Regional Coordinators Implementing ANA

Factors	Seen as Challenge
Buy-in from district leadership	33.3%
Buy-in from school leaders	4.2%
Buy-in from school staff	0.0%
Buy-in from teachers	4.2%
Availability of district/LEA staff to support ANA activities	8.3%
Availability of staff to support ANA activities (e.g., admin tasks)	0.0%
Availability of time to implement ANA activities	8.3%
State-level infrastructure for implementing ANA	4.2%
District-level infrastructure for implementing ANA	4.2%
School-level infrastructure for implementing ANA	4.2%
Understanding of district staff for appropriate use of screening assessment data	0.0%
Understanding of school staff for appropriate use of screening assessment data	0.0%
Access to student performance data	4.2%
Collaboration among ALSDE, OMI, AMSTI, state departments, and LEA	0.0%
Communication among ALSDE, OMI, AMSTI, state departments, and LEA	0.0%
Alabama Summer Math Achievement Program	0.0%
Tools for measuring math coach effectiveness	0.0%
Knowledge of each school's ANA-related needs	0.0%
School or school team relationships	0.0%
Providing tailored support	0.0%
Requirement to simultaneously implement multiple required initiatives	8.3%
Messaging about ANA	0.0%
Training provided to regional coordinators	0.0%
Training provided to math coaches (e.g., monitoring MTSS implementation)	0.0%
Training provided to math teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	4.2%
Other	12.5%

Note. n=24

Table B-6 shows that nearly all responding regional coordinators performed all Alabama Coaching Framework elements as intended.

Table B-6. Regional Coordinator Performance on Alabama Coaching Framework

Element	Performed As Intended
Guides educator and student improvement.	100.0%
Fosters collaborative relationships that support and empower efficacy in educators to support all students.	100.0%
Uses expert knowledge and experience to support educators in their continual improvement in knowledge of content, curriculum, standards, and pedagogy to empower educators to be critical consumers of resources and strategies.	96.0%
Provides coaching that includes the knowledge of and needs for adult learners and applies this mindset to the coaching practice with educators.	92.0%
Provides coaching that requires all participants to be ongoing active learners in practice, not just in theory.	96.0%
Uses strong communication skills to provide constructive improvement through feedback and questioning.	100.0%
Provides individualized and differentiated feedback on specific content knowledge.	100.0%
Uses multiple data sources (e.g., formative, summative, observational) to inform coaching.	100.0%
Applies an understanding of and ability to analyze data and teach others to do the same.	96.0%

Note. n=24

As seen in Table B-7, nearly all responding regional coordinators indicated they were satisfied (44%) or somewhat satisfied (52.0%) with implementation of the ANA.

Table B-7 Regional Coordinators' Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	44.0%
Somewhat satisfied	52.0%
Somewhat dissatisfied	4.0%
Dissatisfied	0.0%

Note. n=24

LEA Staff

The ANA describes 21 key ANA tasks that LEA staff must complete, with 10 of those tasks related to annual data reporting. As seen in Table B-8, most LEA respondents reported understanding the 11 key ANA tasks (65.9%–100%). Most also indicated they received training (74.4%–97.6%) and have access to the resources and supports (66.7%–100%) to perform their key tasks effectively. The only exception to not being trained or having the necessary resources and support was related to using a fractional reasoning screener (i.e., 24.5% received training and 29.3% have access to the necessary resources and support). This trend was also true for LEA staff's perception that they implemented their key ANA tasks as intended (69.2%– 100%) and performance of their tasks contributed to intended ANA outcomes (74.4%–100%), except for using a fractional reasoning screener (i.e., 26.8% implemented as intended and 35.0% contributed to intended ANA outcomes).

Most (74.4%–100%) LEA respondents reported generally understanding their annual reporting tasks (see Table B-9). Most (50.0%–100%) also reported they received the training/PD needed and they have access to the necessary resources and support (47.4%–100%) to successfully perform their annual data reporting tasks. At least half of the responding LEA staff reported implementing their annual reporting tasks as intended (50.0%–100%) and performance of their annual reporting tasks contributed to ANA outcomes (52.6%–100%).

Table B-8. LEA Staff Key ANA Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

LEA Staff Key ANA Tasks	Understand	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
K–5 students are working with an effective or highly effective math teacher, as demonstrated by student math performance data and teacher performance evaluations.	97.6%	92.7%	95.1%	97.6%	97.6%
K–5 students are provided effective instructional strategies to accelerate student progress provided by a highly qualified teacher who has training and experience in implementing teaching math through problem solving; providing an environment for students to make sense of cognitively demanding tasks; providing justifications for strategies and solutions; making connections with math; and receiving feedback about math ideas.	100.0%	92.7%	100.0%	95.1%	97.6%
K–5 students receive math intervention services and supports to improve any identified area of math deficiency	100.0%	97.6%	95.1%	95.1%	95.1%
Kindergarten students are assessed by November using an early numeracy screener recommended by the Elementary Mathematics Task Force to identify those students in need of support for key numeracy concepts.	97.6%	90.2%	97.6%	97.6%	97.6%
Kindergarten students identified by the screener as having a math deficiency are assessed using the diagnostic assessments to identify student misconceptions and gaps in math knowledge or skills.	97.6%	90.2%	95.1%	95.1%	95.1%
Incoming 1st and 2nd grade students are assessed using an early numeracy screener recommended by The Elementary Mathematics Task Force a minimum of 2 times a year to identify those students in need of support for key numeracy concepts.	87.2%	74.4%	66.7%	69.2%	74.4%

LEA Staff Key ANA Tasks	Understand	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
1st or 2nd grade students identified by the screener as having a math deficiency are assessed using the diagnostic assessment to identify student misconceptions and gaps in math knowledge or skills.	92.7%	90.2%	95.1%	95.1%	95.1%
Incoming 4th and 5th grade students are assessed using a fractional reasoning screener approved by the Elementary Mathematics Task Force a minimum of 2 times a year to identify those students in need of support for fractional reasoning.	65.9%	24.4%	29.3%	26.8%	35.0%
4th or 5th grade students identified by the screener as having a math deficiency are assessed using the diagnostic assessment to identify student misconceptions and gaps in math knowledge or skills.	87.2%	74.4%	66.7%	69.2%	74.4%
K–5 students identified with a math deficiency through screeners, diagnostics, or formative assessments shall be provided intensive math interventions recommended by the Elementary Mathematics Task Force to address his or her specific needs.	100%	97.4%	100%	100%	100%
Providing a summer math camp for students in grades K–5 who are identified with a math deficiency. For students in grades K–3, the summer math camp shall be embedded in the summer reading camp.	100%	97.4%	94.9%	100%	100%

Note. n=41

Table B-9. LEA Staff's Key ANA Annual Data Reporting Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

LEA Staff ANA Key Annual Data Reporting Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Number and percentage of all K–5 students, by grade, identified with a math deficiency on an Elementary Mathematics Task Force recommended math assessment.	97.4%	97.4%	97.4%	97.4%	94.9%
By grade, number and percentage of students screened for dyscalculia characteristics, the number and percentage of students identified as demonstrating the characteristics of dyscalculia and receiving dyscalculia specific intervention, and the name of the dyscalculia specific intervention being provided.	74.4%	56.4%	53.8%	53.8%	56.4%
Number and percentage of all K–5 students, by grade, performing on grade level or above grade level, which is defined as scoring level 3 or level 4 on the Alabama Comprehensive Assessment Program, or any derivation thereof.	100.0%	100.0%	100.0%	100.0%	100.0%
Number and percentage of students starting 5th grade with a math score below grade level, which is defined as scoring level 1 or level 2 on the Alabama Comprehensive Assessment Program, or any derivation thereof.	97.4%	97.4%	100.0%	100.0%	100.0%
By grade, number and percentage of eligible students in grades 4 and 5 who attended the Alabama Summer Mathematics Achievement Program in full support schools, that included intensive math instruction.	94.7%	94.7%	94.7%	92.1%	92.1%
By grade, number and percentage of all students retained in grades K–5 based on math deficiencies.	100.0%	100.0%	100.0%	100.0%	100.0%
By school, number of teachers who have earned the K–5 math coach endorsement.	94.7%	89.5%	86.8%	89.5%	89.5%
By school, number and percentage of incoming students in grades 1 and 2 identified as having a math deficiency.	100.0%	97.4%	100.0%	100.0%	100.0%
By school, number and percentage of incoming students in grades 4 and 5 identified as having a fractional reasoning deficiency.	78.9%	50.0%	47.4%	50.0%	52.6%

Note. n=38

A key ANA task for LEA staff is to provide a variety of intervention services and support to students identified with a math deficiency, and the frequency with which they implement these services and support varies (see Table B-10). LEA staff reported on the frequency of implementing the various intervention services and supports for students identified with a math deficiency. Most LEA respondents reported daily implementation of ensuring K–5 students (a) work with an effective math teacher (78.9%); (b) receive effective math instruction to accelerate their progress, are provided an environment to make sense of cognitively demanding tasks, receive justification for math problem solving, make connections with math, and receive feedback about math ideas (71.1%); (c) receive math intervention services and supports to improve an identified math deficiency (70.3%); and (d) receive intensive math interventions when a math deficiency is identified (62.2%). Approximately two-fifths to half (38.9%–54.1%) of the LEA respondents indicated they implement intervention services and supports associated with the early numeracy screener less than once a month. Almost three-fourths to about half (48.7%–73.0%) of the LEA respondents indicated they do not implement intervention services and supports associated with the fractional reasoning screener.

Table B-10. LEA Staff's Frequency of Implementing ANA Math Intervention Services and Support

ANA Math Intervention Services and Supports	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
K–5 students are working with an effective or highly effective math teachers, as demonstrated by student math performance data and teacher performance evaluations.	0.0%	0.0%	5.3%	15.8%	78.9%
K–5 students are provided effective instructional strategies to accelerate student progress provided by a highly qualified teacher who has training and experience in implementing teaching math through problem solving; providing an environment for students to make sense of cognitively demanding tasks; providing justifications for strategies and solutions; making connections with math; and receiving feedback about math ideas.	0.0%	0.0%	2.6%	26.3%	71.1%
K–5 students receive math intervention services and supports to improve any identified area of math deficiency.	0.0%	0.0%	0.0%	29.7%	70.3%
Kindergarten students are assessed by November using an early numeracy screener recommended by the Elementary Mathematics Task Force to identify those students in need of support for key numeracy concepts.	0.0%	44.4%	25.0%	5.6%	25.0%
Kindergarten students identified by the screener as having a math deficiency are assessed using the diagnostic assessments to identify student misconceptions and gaps in math knowledge or skills.	2.7%	43.3%	16.2%	16.2%	21.6%

ANA Math Intervention Services and Supports	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Incoming 1st and 2nd grade students are assessed using an early numeracy screener recommended by the Elementary Mathematics Task Force a minimum of 2 times a year to identify those students in need of support for key numeracy concepts.	0.0%	54.1%	16.2%	10.8%	18.9%
1st or 2nd grade students identified by the screener as having a math deficiency are assessed using the diagnostic assessment to identify student misconceptions and gaps in math knowledge or skills.	2.9%	38.9%	19.4%	19.4%	19.4%
Incoming 4th and 5th grade students are assessed using a fractional reasoning screener approved by the Elementary Mathematics Task Force a minimum of 2 times a year to identify those students in need of support for fractional reasoning.	73.0%	5.4%	8.1%	8.1%	5.4%
4th or 5th grade students identified by the screener as having a math deficiency are assessed using the diagnostic assessment to identify student misconceptions and gaps in math knowledge or skills.	48.7%	18.9%	10.8%	13.5%	8.1%
K–5 students identified with a math deficiency through screeners, diagnostics, or formative assessments shall be provided intensive math interventions recommended by the Elementary Mathematics Task Force to address his or her specific needs.	2.7%	5.4%	10.8%	18.9%	62.2%
Providing a summer math camp for students in grades K – 5 who are identified with a math deficiency. For students in grades K–3, the summer math camp shall be embedded in the summer reading camp.	0.0%	43.3%	16.2%	13.5%	27.0%

Note. n=37

The ANA lists several specific intervention services and supports that LEA staff may implement to improve a student's identified math deficiency. At least two-thirds (67.5%–100%) of responding LEA staff reported providing specific interventions to students on a daily or weekly basis (see Table B-11). The exception was that most LEA staff reported providing a home-based math plan either once a month (29.7%) or less than once a month (40.5%). At least one-fifth of responding LEA staff reported not providing supplemental, evidence-based math instruction before or after school by a highly qualified teacher or tutor.

Table B-11. LEA Staff's Frequency of Implementing Specific ANA Interventions to Improve Math Deficiencies

Specific ANA Intervention to Improve Math Deficiencies	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Additional instructional time devoted to evidence-based mathematics instruction and interventions recommended by the Elementary Mathematics Task Force, including engaging, high quality, and rigorous supplemental sessions.	0.0%	0.0%	0.0%	21.6%	78.4%
Providing daily targeted small group mathematics intervention based on student needs.	0.0%	0.0%	0.0%	21.6%	78.4%
Providing supplemental, evidence-based mathematics interventions before or after school, or both, delivered by a highly qualified teacher of mathematics or trained tutor.	21.7%	10.8%	0.0%	35.1%	32.4%
Frequently monitoring the progress of the mathematics skills of each student throughout the school year and adjusting instruction according to student need.	0.0%	0.0%	24.3%	46.0%	29.7%
Incorporating material from a previous grade to link understanding to grade level curriculum.	0.0%	5.4%	8.1%	56.8%	29.7%
Incorporating a concrete, semi-concrete, abstract approach.	0.0%	2.7%	5.4%	40.5%	51.4%
Incorporating explicit systematic strategy instruction, including summarizing key points and reviewing vocabulary prior to the lesson.	0.0%	0.0%	0.0%	21.6%	78.4%
Utilizing mathematics strategies or programs, grounded in the science of learning, that accelerate student mathematics achievement.	0.0%	0.0%	5.4%	10.8%	83.8%
Attending to conceptual understanding as well as procedural fluency.	0.0%	0.0%	5.5%	16.7%	77.8%
Providing a home-based mathematics plan, including participation in family training workshops or regular family-guided home mathematics activities.	0.0%	40.6%	29.7%	13.5%	16.2%

Note. n=37

LEA staff provided feedback about the factors they believe need improvement or are barriers to ANA implementation (see Table B-12). Slightly less than half of LEA respondents indicated that the math teachers' openness to coaching needed to improve (45.8%) and slightly more than a quarter cited that the teachers' lack of openness was a barrier (27.1%) to implementing the ANA. In addition, a large number (41.7%–45.8%) of LEA respondents reported the teachers' familiarity with state math content standards (41.7%) and the teachers' ability to align instruction with the math content standards (41.7%) need to be improved. As seen in Table B-13, the LEA respondents did not perceive any challenge so major that it became a barrier to implementing the ANA.

Table B-12. LEA Staff's Perceptions of Factors Needing Improvement and Barriers to ANA Implementation

Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from school staff	25.0%	14.6%
Buy-in from math teachers	31.3%	18.8%
Availability of district/LEA staff to support ANA activities/tasks	14.6%	2.1%
Availability of school staff to support ANA activities/tasks (e.g., admin/LEA tasks)	18.8%	6.3%
Availability of time to implement ANA activities	29.2%	16.7%
District-level infrastructure for implementing ANA	14.6%	2.1%
School-level infrastructure for implementing ANA	18.8%	8.3%
Tools for measuring math coach effectiveness	16.7%	8.3%
Math coaches' ability to interpret math performance data	12.5%	4.2%
Math coaches' ability to appropriately use math performance data	12.5%	6.3%
Math teachers' familiarity with state mathematics content standards	41.7%	18.8%
Math teachers' ability to align instruction with state mathematics content standards	41.7%	14.6%
Math teachers' ability to interpret math performance data	35.4%	14.6%
Math teachers' ability to appropriately use math performance data	31.3%	12.5%
Math teachers' openness to coaching	45.8%	27.1%
Math teachers' communication with parents about student math performance	29.2%	14.6%
Alabama Summer Math Achievement Program	22.9%	4.2%
Training provided to math coaches	10.4%	4.2%
Training provided to teachers (e.g., reporting of annual data, interventions to support math deficiencies, administering screening or diagnostic assessments)	25.0%	10.4%
Other	12.5%	18.8%

Note. n=43

Table B-13. Factors Perceived as Challenge for LEA Staff Implementing ANA

Factors	Seen as Challenge
Buy-in from school staff	5.7%
Buy-in from math teachers	8.6%
Availability of district/LEA staff to support ANA activities/tasks	0.0%
Availability of school staff to support ANA activities/tasks (e.g., admin/LEA tasks)	0.0%
Availability of time to implement ANA activities	11.4%
District-level infrastructure for implementing ANA	0.0%
School-level infrastructure for implementing ANA	0.0%
Tools for measuring math coach effectiveness	0.0%
Math coaches' ability to interpret math performance data	2.9%
Math coaches' ability to appropriately use math performance data	0.0%
Math teachers' familiarity with state mathematics content standards	2.9%
Math teachers' ability to align instruction with state mathematics content standards	11.4%
Math teachers' ability to interpret math performance data	2.9%
Math teachers' ability to appropriately use math performance data	2.9%
Math teachers' openness to coaching	11.4%
Math teachers' communication with parents about student math performance	2.9%
Alabama Summer Math Achievement Program	0.0%
Training provided to math coaches	0.0%
Training provided to teachers (e.g., reporting of annual data, interventions to support math deficiencies, administering screening or diagnostic assessments)	5.7%
Other	17.1%

Note. n=48

Table B-14 shows that nearly all responding LEA staff performed all Alabama Coaching Framework elements as intended.

Table B-14 LEA Staff Performance on Alabama Coaching Framework

Element	Performed As Intended
Establish expectations for a system of coaching, which aligns with the Alabama Coaching Framework.	100.0%
Communicate coaching guidelines clearly and consistently, including an emphasis on the non-evaluative role of coach support and the limits of coach responsibilities.	100.0%
Monitor the system of coaching to ensure the fidelity of implementation and accountability at all levels of the coaching process.	97.9%
Share data in a timely manner with all participants in the coaching process.	97.9%
Provide evidence-based professional learning focused for both principals and instructional coaches, including collaborative opportunities in meetings and trainings.	97.9%
Provide access to evidence-based resources for principals, instructional coaches, and teachers.	100.0%
Coordinate support with regional specialists (where available) in the development and delivery of evidence-based professional learning.	100.0%
Assist building principals in the hiring of effective coaches as outlined in the ALSDE job descriptions for coaching positions.	100.0%
Support principals in scheduling that allocates adequate time for evidence-based professional learning, implementation of evidence-based practices, and reflective revision and planning.	100.0%

Note. n=37

Most responding LEA staff indicated they were satisfied (28.5%) or somewhat satisfied (65.7%) with how the ANA is being implemented (see Table B-15).

Table B-15. LEA Staff's Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	28.5%
Somewhat satisfied	65.7%
Somewhat dissatisfied	2.9%
Dissatisfied	2.9%

Note. n=35

Math Coaches

Table B-16 presents the math coaches' responses to understanding their key ANA tasks, having received training and access to the necessary resources and supports to perform the tasks, whether they performed each key ANA task as intended, and their belief that implementation of the key ANA tasks leads to achieving ANA's intended outcomes. Most (73.4%–100%) responding math coaches indicated understanding their key ANA task requirements. Most also reported having received training to successful perform their tasks (75.4%–100%), having access to the necessary resources and supports (78.2%–100%), implementing their key ANA tasks as intended (81.0%–100%), and implementation of their key tasks leads to achieving ANA's intended outcomes (78.9%–100%). The only exception was assisting teachers to administer the fractional reasoning screening assessment or diagnostic assessments. Slightly less than half the responding math coaches reported not having received training (47.5%) to perform this task, not having access to the necessary resources and support (48.9%), they did not implement this task as intended (48.9%), and their lack of implementing this task failed to help achieve ANA's intended outcomes (49.6%).

Table B-16. Math Coaches' Key ANA Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

Math Coach Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Supporting instructional improvements with an emphasis on Tier 1 math instruction.	100.0%	97.9%	98.6%	98.6%	97.9%
Collaborating with the principal and faculty to implement a strategic plan for coaching and math instruction.	98.6%	97.2%	99.3%	97.2%	96.5%
Facilitating schoolwide math professional learning that includes job-embedded assistance, joint preplanning, modeling lessons, co-teaching lessons, targeted observations, and debriefings.	100.0%	98.6%	98.6%	99.3%	98.6%
Modeling evidence-based math instruction and intervention strategies.	98.6%	95.8%	97.9%	96.5%	96.5%
Continually mentoring and coaching math teachers.	100.0%	97.9%	99.3%	99.3%	98.6%
Assisting teachers in using data to differentiate math instruction and identify students with dyscalculia and other exceptionalities.	88.7%	75.4%	78.2%	81.0%	78.9%
Monitoring student progress through formative assessments at least 3 times per year and making recommendations for modifying instruction based on student's need and trends.	99.3%	96.5%	98.6%	99.3%	97.9%
Focusing solely on my role as math coach at the elementary level.	98.6%	99.3%	98.6%	96.4%	97.1%
Collaborating with math teachers and grade-level teams of math teachers to foster use of appropriate instructional materials.	100.0%	99.3%	99.3%	99.3%	99.3%
Collaborating with grade-level teams to develop rigorous tasks, lessons, and assessments aligned to math content standards, analyze student work, and provide real-time feedback and make next-step instructional decisions based on student evidence.	100.0%	98.6%	98.6%	98.6%	99.3%

Math Coach Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Assisting math teachers with using formative assessments and analyzing student work to identify students with misconceptions, students exhibiting dyscalculia, and students needing acceleration.	98.6%	94.2%	95.7%	95.7%	95.7%
Assisting teachers in administering early numeracy screeners or diagnostic assessments to grades K–2 students.	97.8%	95.0%	97.1%	93.5%	95.0%
Assisting teachers with in administering fractional reasoning screeners or diagnostic assessments to grades 4–5 students.	73.4%	47.5%	48.9%	48.9%	49.6%
Advocating, planning, and coordinating opportunities for school-based family and community engagement in math.	98.6%	93.5%	96.4%	95.7%	95.7%
Participating actively in OMI and AMSTI visits and professional learning to meet personal outcomes and school, district, and state math goals.	100.0%	100.0%	100.0%	100.0%	100.0%
Engaging in ongoing math learning opportunities.	100.0%	100.0%	100.0%	100.0%	100.0%
Facilitating use of assessment data at all levels of math instruction to assist in decision making that moves students to higher levels of math performance.	100.0%	99.3%	99.3%	97.8%	97.8%
Planning/facilitating professional learning opportunities that assist teachers in targeting student deficits, facilitate professional conversations, foster student engagement, assess student learning, reflect on professional practices, and identify next learning steps to achieve state, district, and school math goals.	100.0%	100.0%	100.0%	99.3%	100.0%
Tracking/reporting time spent with math teachers.	100.0%	99.3%	98.5%	97.8%	99.3%
Supporting teachers in the integration of computer science and computational thinking concepts into math classrooms.	94.1%	86.8%	89.7%	89.7%	91.2%

Note. n=142

All (100%) responding math coaches reported they mentor and coach math teachers as well as focus solely on their role as math coach every day (see Table B-17). Slightly more than two-thirds (68.4%) of the math coaches indicated they do not assist teachers in administering fractional reasoning screeners or diagnostic assessments. Fifteen (11.2%) of the math coaches reported not assisting teachers in using data to differentiate math instruction and identify students with dyscalculia and 13 (9.8%) math coaches reported they do not support teachers to integrate computer science and computational thinking concepts into math classrooms. About half of the math coaches reported performing three key ANA tasks once a month: monitoring student progress through formative assessments and modifying instruction based on student's needs (44.5%), engaging in ongoing math learning opportunities (49.6%), and participating actively in OMI and AMSTI visits and professional learning (56.4%). Two key tasks were performed less than once a month: advocating, planning, and coordinating school-based math opportunities (48.9%) and assisting teachers in administering early numeracy screeners or diagnostic assessments (70.7%). About one-third of the responding math coaches reported they plan or facilitate professional learning opportunities for teachers on a weekly (33.8%) or monthly (36.1%) basis. Most (64.6%–99.3%) responding math coaches reported performing their other key ANA tasks daily or weekly.

Table B-17. Math Coaches' Frequency of Implementing Key ANA Tasks

Math Coach Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Supporting instructional improvements with an emphasis on Tier 1 math instruction.	0.0%	0.7%	1.5%	10.5%	87.3%
Collaborating with the principal and faculty to implement a strategic plan for coaching and math instruction.	0.7%	3.0%	6.0%	81.3%	9.0%
Facilitating schoolwide math professional learning that includes job-embedded assistance, joint preplanning, modeling lessons, co-teaching lessons, targeted observations, and debriefings.	0.7%	6.0%	14.2%	35.1%	44.0%
Modeling evidence-based math instruction and intervention strategies.	0.7%	1.5%	3.7%	25.4%	68.7%
Continually mentoring and coaching math teachers.	0.0%	0.0%	0.0%	6.0%	94.0%
Assisting teachers in using data to differentiate math instruction and identify students with dyscalculia and other exceptionalities.	11.2%	4.5%	16.4%	44.0%	23.9%
Monitoring student progress through formative assessments at least 3 times per year and making recommendations for modifying instruction based on student's need and trends.	0.7%	17.9%	44.8%	22.4%	14.2%
Focusing solely on my role as math coach at the elementary level.	0.7%	0.0%	0.0%	3.7%	95.5%
Collaborating with math teachers and grade-level teams of math teachers to foster use of appropriate instructional materials.	0.0%	0.0%	6.0%	42.5%	51.5%

Math Coach Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Collaborating with grade-level teams to develop rigorous tasks, lessons, and assessments aligned to math content standards, analyze student work, and provide real-time feedback and make next-step instructional decisions based on student evidence.	0.7%	3.0%	10.5%	61.9%	23.9%
Assisting math teachers with using formative assessments and analyzing student work to identify students with misconceptions, students exhibiting dyscalculia, and students needing acceleration.	5.3%	5.3%	15.0%	44.3%	30.1%
Assisting teachers in administering early numeracy screeners or diagnostic assessments to grades K–2 students.	8.3%	70.7%	12.0%	4.5%	4.5%
Assisting teachers with in administering fractional reasoning screeners or diagnostic assessments to grades 4–5 students.	68.4%	25.5%	4.5%	0.8%	0.8%
Advocating, planning, and coordinating opportunities for school-based family and community engagement in math.	3.0%	48.9%	33.1%	8.2%	6.8%
Participating actively in OMI and AMSTI visits and professional learning to meet personal outcomes and school, district, and state math goals.	0.0%	4.5%	56.4%	33.1%	6.0%
Engaging in ongoing math learning opportunities.	0.0%	6.8%	49.6%	21.0%	22.6%
Facilitating use of assessment data at all levels of math instruction to assist in decision making that moves students to higher levels of math performance.	1.5%	2.2%	25.6%	47.4%	23.3%
Planning/facilitating professional learning opportunities that assist teachers in targeting student deficits, facilitate professional conversations, foster student engagement, assess student learning, reflect on professional practices, and identify next learning steps to achieve state, district, and school math goals.	0.0%	15.8%	36.1%	33.8%	14.3%
Tracking/reporting time spent with math teachers.	0.0%	0.7%	0.0%	9.8%	89.5%
Supporting teachers in the integration of computer science and computational thinking concepts into math classrooms.	9.8%	15.1%	10.5%	36.8%	27.8%

Note. n=134

Table B-18 summarizes the math coaches' perceptions of the factors that need to be improved or are barriers to ANA implementation. Slightly more than half of responding math coaches indicated the teachers' familiarity with the state math content standards (56.6%) and the teachers' ability to align instruction to the standards (58.6%) need to be improved; about one-third also reported these as barriers to ANA implementation (30.9% and 31.6%, respectively). Additionally, about one-third of responding math coaches indicated the need to improve teachers' ability to appropriately use math performance data (30.3%), *Monday.com* (35.5%), training provided to math teachers (38.2%), and buy-in from math teachers (40.8%). As seen in Table B-19, the math coaches did not perceive any challenge so major that it became a barrier to implementing the ANA.

Table B-18. Math Coaches' Perceptions of Factors Needing Improvement and Barriers to Implementation

Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from school staff	23.7%	11.8%
Buy-in from math teachers	40.8%	23.7%
Availability of district/LEA staff to support ANA activities/tasks	17.8%	7.2%
Availability of school staff to support ANA activities/tasks (e.g., admin/building tasks)	19.1%	10.5%
District-level infrastructure for implementing ANA	22.4%	9.2%
School-level infrastructure for implementing ANA	13.8%	10.5%
Teachers' familiarity with the state mathematics content standards	56.6%	30.9%
Teachers' ability to align instruction to the state mathematics content standards	58.6%	31.6%
Teachers' ability to interpret math performance data	27.6%	17.1%
Teachers' ability to appropriately use math performance data	30.3%	18.4%
Teachers' openness to coaching	32.2%	21.7%
Teachers' communication with parents about student math performance	21.7%	8.6%
Alabama Summer Math Achievement Program	25.0%	2.0%
Tools for tracking coaching cycles	12.5%	0.7%
Tools for measuring effectiveness of coaching cycles	10.5%	0.7%
Hands-on resources and materials	21.1%	11.8%
Availability of time to implement ANA activities/tasks (e.g., tiered instruction, planning/strategizing with teacher)	30.9%	17.1%
Monday.com	35.5%	5.3%
Training provided to math coaches	8.6%	4.6%
Training provided to math teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	38.2%	23.7%
Other	11.2%	5.9%

Note. n=152

Table B-19. Factors Perceived as Challenge for Math Coaches Implementing ANA

Factors	Seen as Challenge
Buy-in from school staff	1.5%
Buy-in from math teachers	13.7%
Availability of district/LEA staff to support ANA activities/tasks	0.8%
Availability of school staff to support ANA activities/tasks (e.g., admin/building tasks)	3.8%
District-level infrastructure for implementing ANA	6.1%
School-level infrastructure for implementing ANA	3.1%
Teachers' familiarity with the state mathematics content standards	8.4%
Teachers' ability to align instruction to the state mathematics content standards	12.2%
Teachers' ability to interpret math performance data	0.8%
Teachers' ability to appropriately use math performance data	0.0%
Teachers' openness to coaching	8.4%
Teachers' communication with parents about student math performance	0.0%
Alabama Summer Math Achievement Program	0.0%
Tools for tracking coaching cycles	0.0%
Tools for measuring effectiveness of coaching cycles	0.0%
Hands-on resources and materials	3.8%
Availability of time to implement ANA activities/tasks (e.g., tiered instruction, planning/strategizing with teacher)	9.9%
Monday.com	9.2%
Training provided to math coaches	0.0%
Training provided to teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	10.7%
Other	7.6%

Note. n=131

Table B-20 shows that nearly all responding math coaches performed all Alabama Coaching Framework elements as intended.

Table B-20. Math Coach Performance on Alabama Coaching Framework

Element	Performed As Intended
Guides educator and student improvement.	100.0%
Fosters collaborative relationships that support and empower efficacy in educators to support all students.	100.0%
Uses expert knowledge and experience to support educators in their continual improvement in knowledge of content, curriculum, standards, and pedagogy to empower educators to be critical consumers of resources and strategies.	99.3%
Provides coaching that includes the knowledge of and needs for adult learners and applies this mindset to the coaching practice with educators.	98.7%
Provides coaching that requires all participants to be ongoing active learners in practice, not just in theory.	100.0%
Uses strong communication skills to provide constructive improvement through feedback and questioning.	98.7%
Provides individualized and differentiated feedback on specific content knowledge.	99.3%
Uses multiple data sources (e.g., formative, summative, observational) to inform coaching.	99.3%
Applies an understanding of and ability to analyze data and teach others to do the same.	99.3%

Note. n=131

Table B-21 shows that most responding math coaches were satisfied (49.6%) or somewhat satisfied (46.6%) with how the ANA is being implemented.

Table B-21. Math Coaches' Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	49.6%
Somewhat satisfied	46.6%
Somewhat dissatisfied	3.8%
Dissatisfied	0.0%

Note. n=131

FS School Principals

As seen in Table B-22, almost all responding FS school principals reported understanding the requirements of their key ANA tasks (87.9%–100%), having received training to perform the tasks (90.9%–100%), having access to the necessary resources and supports (84.8%–100%), implementing the key tasks as intended (97.0%–100%), and their implementation of the key ANA tasks helped achieve ANA's intended outcomes (91.2%–100%).

Table B-22. FS School Principals' Key ANA Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

FS School Principal Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Ensuring all school leaders and staff actively participate in any OMI or OSI support.	100.0%	100.0%	100.0%	100.0%	100.0%
Engaging in and implementing OMI and OSI professional learning.	100.0%	100.0%	94.1%	100.0%	94.1%
Using approved math curricula for core instruction.	97.1%	97.1%	97.1%	97.1%	97.1%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	97.1%	97.1%	94.1%	97.1%	91.2%
Requiring math teachers to engage in and implement OMI and OSI professional learning.	100.0%	100.0%	97.1%	100.0%	100.0%
Using approved formative assessments, screeners, and diagnostic assessments.	100.0%	97.1%	97.1%	100.0%	100.0%
Implementing MTSS to monitor student progress, evaluate the effectiveness of instruction, and improve instructional decisions.	100.0%	100.0%	97.1%	100.0%	100.0%
Supporting and responding to OMI and OSI requests.	100.0%	100.0%	97.1%	100.0%	100.0%
Providing the Alabama Math Summer Achievement Program to all grades 4–5 students identified with a math deficiency.	100.0%	91.2%	97.1%	97.1%	100.0%
Staffing the program with highly effective math teachers.	100.0%	93.9%	84.8%	97.0%	93.9%
Including not less than 40 hours, nor more than 70 hours of time spent in math problem solving, based on the severity of student need.	97.0%	90.9%	87.9%	97.0%	100.0%
Incorporating an Elementary Mathematics Task Force recommended math assessment system, that shall be administered both at the beginning and end of each Alabama Summer Mathematics Achievement Program, to measure student progress.	97.0%	90.9%	97.0%	97.0%	93.9%
Coordinating with existing summer programs conducted by the local education agency or in partnership with community-based summer programs for students similarly situated.	87.9%	90.9%	93.9%	97.0%	100.0%

Note. n=34

The frequency with which the FS school principals reported implementing their key ANA tasks varied (see Table B-23). Across the key tasks, most (87.2%–100%) responding FS principals reported performing them on a daily (18.2%–87.9%), weekly (6.1%–45.5%), or monthly (3.0%–63.6%) basis. One (3%) FS principal reported not using approved math curricula for core instruction and not using approved formative assessments, screeners, and diagnostic assessments.

Table B-23. FS School Principals' Frequency of implementing Key ANA Tasks

FS School Principal Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Ensuring all school leaders and staff actively participate in any OMI or OSI support.	0.0%	0.0%	42.4%	33.3%	24.3%
Engaging in and implementing OMI and OSI professional learning.	0.0%	3.0%	63.6%	15.2%	18.2%
Using approved math curricula for core instruction.	3.0%	0.0%	3.0%	6.1%	87.9%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	0.0%	0.0%	3.0%	18.2%	78.8%
Requiring math teachers to engage in and implement OMI and OSI professional learning.	0.0%	12.1%	45.4%	15.2%	27.3%
Using approved formative assessments, screeners, and diagnostic assessments.	3.0%	0.0%	27.3%	33.3%	36.4%
Implementing MTSS to monitor student progress, evaluate the effectiveness of instruction, and improve instructional decisions.	0.0%	3.1%	48.5%	24.2%	24.2%
Supporting and responding to OMI and OSI requests.	0.0%	3.0%	18.2%	45.5%	33.3%
Providing the Alabama Math Summer Achievement Program to all grades 4–5 students identified with a math deficiency.	6.1%	6.1%	9.1%	24.2%	54.5%
Staffing the program with highly effective math teachers.	0.0%	12.9%	9.7%	6.4%	71.0%
Including not less than 40 hours, nor more than 70 hours of time spent in math problem solving, based on the severity of student need.	0.0%	6.4%	19.4%	25.8%	48.4%vv

FS School Principal Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Incorporating an Elementary Mathematics Task Force recommended math assessment system, that shall be administered both at the beginning and end of each Alabama Summer Mathematics Achievement Program, to measure student progress.	3.2%	6.5%	25.8%	38.7%	25.8%
Coordinating with existing summer programs conducted by the local education agency or in partnership with community-based summer programs for students similarly situated.	0.0%	9.7%	25.8%	29.0%	35.5%

Note. n=33

Table B-24 presents the factors that FS school principals perceived need to be improved or are barriers to ANA implementation. Slightly more than one-third of responding FS school principals indicated the teachers' familiarity with the state math content standards (36.8%), the teachers' ability to align instruction to the standards (36.8%), and the teachers' ability to appropriately use math performance data (34.2%) need to be improved. Table B-25 indicates that the FS school principals did not perceive any challenge so major that it became a barrier to implementing the ANA.

Table B-24. FS School Principals' Perceptions of Factors Needing Improvement and Barriers to Implementation

FS School Principal Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from school staff	21.1%	2.6%
Buy-in from math teachers	23.7%	13.2%
Availability of district/LEA staff to support ANA activities/tasks	21.1%	2.6%
Availability of school staff to support ANA activities/tasks (e.g., admin/building tasks)	7.9%	5.3%
Availability of time to implement ANA activities/tasks	18.4%	7.9%
District-level infrastructure for implementing ANA	26.3%	5.3%
School-level infrastructure for implementing ANA	18.4%	0.0%
Tools for measuring math coach effectiveness	18.4%	2.6%
Math coaches' ability to interpret math performance data	10.5%	0.0%
Math coaches' ability to appropriately use math performance data	7.9%	2.6%
Teachers' familiarity with state mathematics content standards	36.8%	7.9%
Teachers' ability to align instruction to state mathematics content standards	36.8%	13.2%
Teachers' ability to interpret math performance data	34.2%	5.3%
Teachers' ability to appropriately use math performance data	23.7%	10.5%

FS School Principal Factors	Needs Improvement	Barrier to ANA Implementation
Teachers' openness to coaching	28.9%	13.2%
Teachers' communication with parents about student math performance	28.9%	7.9%
Alabama Summer Math Achievement Program	13.2%	2.6%
Training provided to math coaches	13.2%	2.6%
Training provided to teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	26.3%	13.2%
Other	10.5%	10.5%

Note. n=38

Table B-25. Factors Perceived as Challenge for FS School Principals Implementing ANA

Factors	Seen as Challenge
Buy-in from school staff	3.2%
Buy-in from math teachers	6.5%
Availability of district/LEA staff to support ANA activities/tasks	0.0%
Availability of school staff to support ANA activities/tasks (e.g., admin/building tasks)	0.0%
Availability of time to implement ANA activities/tasks	6.5%
District-level infrastructure for implementing ANA	0.0%
School-level infrastructure for implementing ANA	0.0%
Tools for measuring math coach effectiveness	0.0%
Math coaches' ability to interpret math performance data	0.0%
Math coaches' ability to appropriately use math performance data	0.0%
Teachers' familiarity with state mathematics content standards	19.4%
Teachers' ability to align instruction to state mathematics content standards	6.5%
Teachers' ability to interpret math performance data	0.0%
Teachers' ability to appropriately use math performance data	3.2%
Teachers' openness to coaching	9.7%
Teachers' communication with parents about student math performance	3.2%
Alabama Summer Math Achievement Program	3.2%
Training provided to math coaches	6.5%
Training provided to teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	9.7%
Other	19.4%

Note. n=38

Table B-26 shows that nearly all responding FS principals performed all Alabama Coaching Framework elements as intended.

Table B-26. FS Principal Performance on Alabama Coaching Framework

Element	Performed As Intended
Perceive coaching as an inclusive endeavor.	100.0%
Communicate a clear and transparent commitment to improving instruction and student outcomes.	100.0%
Develop a shared vision of high-quality instruction and learning within the context of a coaching culture.	100.0%
Ensure the coaching process is monitored for fidelity to implementation.	97.4%
Maintain a clear separation between roles of principal and coach in the coaching process to facilitate the non-evaluative relationship between coach and teachers.	100.0%
Focus on the use of data to inform collaborative problem-solving and instructional decision-making as part of the continuous cycle of instructional improvement.	97.4%
Commit to a collaborative professional learning process with instructional coaches and teachers.	100.0%

Note. n=33

Table B-27 shows that most FS school principals were satisfied (43.3%) or somewhat satisfied (53.3%) with how the ANA is being implemented.

Table B-27. FS School Principals' Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	43.4%
Somewhat satisfied	53.3%
Somewhat dissatisfied	3.3%
Dissatisfied	0.0%

Note. n=30

LS School Principals

The ANA outlines six key tasks that LS school principals must perform to facilitate students in their schools becoming high math achievers.[14] As seen in Table B-28, almost all responding LS school principals reported understanding the requirements of their key ANA tasks (97.5%–100%), having received training to perform the tasks (82.3%–97.5%), having access to the necessary resources and supports (92.4%–98.7%), implementing the key tasks as intended (93.7%–98.7%), and implementation of their key ANA tasks helped achieve ANA's intended outcomes (91.1%–96.2%).

[14] The ANA indicates two fewer key tasks for LS than FS school principals: (a) ensuring all school leaders and staff actively participate in any OMI or OSI support and (b) engaging in and implementing OMI and OSI professional learning. LS school principals also are not required to provide the Alabama Mathematics Summer Achievement Program and the tasks associated with its implementation.

Table B-28. LS School Principals' Key ANA Task Ratings of Understanding, Training Received, Resource Access, and Intended Implementation and Outcomes

LS School Principal Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Using approved math curricula for core instruction.	98.8%	87.3%	98.7%	97.5%	96.2%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	100.0%	82.3%	93.7%	94.9%	92.4%
Requiring math teachers to engage in and implement OMI and OSI professional learning.	100.0%	97.5%	98.7%	98.7%	93.7%
Using approved formative assessments, screeners, and diagnostic assessments.	97.5%	84.8%	92.4%	93.7%	91.1%
Implementing MTSS to monitor student progress, evaluate the effectiveness of instruction, and improve instructional decisions.	98.8%	97.5%	97.5%	98.7%	96.2%
Supporting and responding to OMI and OSI requests.	97.5%	97.5%	97.5%	97.5%	96.2%

Note. n=79

The LS school principals generally reported implementing their key ANA tasks on a daily (34.2%–92.4%) or weekly (6.3%–39.2%) basis (see Table B-29). A large number (39.2%) of LS school principals reported implementing MTSS to monitor student progress, evaluate the effectiveness of instruction, and improve instruction decisions once a month.

Table B-29. LS School Principals' Frequency of Implementing Key ANA Tasks

LS School Principal Key Tasks (n=79)	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Using approved math curricula for core instruction.	0.0%	1.3%	0.0%	6.3%	92.4%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	3.8%	1.3%	2.5%	8.9%	83.5%
Requiring math teachers to engage in and implement OMI and OSI professional learning.	0.0%	11.4%	26.6%	15.2%	46.8%
Using approved formative assessments, screeners, and diagnostic assessments.	0.0%	6.3%	17.7%	39.3%	36.7%
Implementing MTSS to monitor student progress, evaluate the effectiveness of instruction, and improve instructional decisions.	0.0%	5.1%	39.2%	21.5%	34.2%
Supporting and responding to OMI and OSI requests.	1.3%	5.1%	19.0%	31.6%	43.0%

Note. n=79

At least one-third of responding LS school principals indicated the training provided to teachers (40.0%), the teachers' ability to align instruction to the state math content standards (35.6%), the availability of time to implement ANA activities (34.4%), and the teachers' familiarity with state math standards need to be improved (see Table B-30). Additionally, at least one-quarter of the LS principals reported the teachers' ability to (a) appropriately use math performance data (30.0%), (b) interpret math performance data (28.9%), and openness to coaching (28.9%) needs improvement. As seen in Table B-31, the LS school principals did not perceive any challenge so major that it became a barrier to implementing the ANA.

Table B-30. LS School Principals' Perceptions of Factors Needing Improvement and Barriers to Implementation

Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from school staff	18.9%	7.8%
Buy-in from math teachers	11.1%	3.3%
Availability of district/LEA staff to support ANA activities	14.4%	4.4%
Availability of school staff to support ANA activities (e.g., admin/building tasks)	8.9%	3.3%
Availability of time to implement ANA activities	34.4%	11.1%
District-level infrastructure for implementing ANA	17.8%	8.9%
School-level infrastructure for implementing ANA	11.1%	4.4%
Tools for measuring math coach effectiveness	13.3%	1.1%
Math coaches' ability to interpret math performance data	7.8%	0.0%
Math coaches' ability to appropriately use math performance data	8.9%	1.1%
Teachers' familiarity with state mathematics content standards	31.1%	18.9%
Teachers' ability to align instruction to state mathematics content standards	35.6%	18.9%
Teachers' ability to interpret math performance data	28.9%	12.2%
Teachers' ability to appropriately use math performance data	30.0%	14.4%
Teachers' openness to coaching	28.9%	13.3%
Teachers' communication with parents about student math performance	23.3%	6.7%
Alabama Summer Math Achievement Program	21.1%	4.4%
Training provided to math coaches	3.3%	0.0%
Training provided to teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	40.0%	15.6%
Other	8.9%	7.8%

Note. n=90

Table B-31. Factors Perceived as Challenge for LS School Principals' Implementing ANA

Factors	Seen as Challenge
Buy-in from school staff	2.7%
Buy-in from math teachers	1.3%
Availability of district/LEA staff to support ANA activities/tasks	2.7%
Availability of staff to support ANA activities (e.g., admin/building tasks)	1.3%
Availability of time to implement ANA activities	14.7%
District-level infrastructure for implementing ANA	1.3%
School-level infrastructure for implementing ANA	0.0%
Tools for measuring math coach effectiveness	1.3%
Math coaches' ability to interpret math performance data	0.0%
Math coaches' ability to appropriately use math performance data	0.0%
Teachers' familiarity with state mathematics content standards	9.3%
Teachers' ability to align instruction to state mathematics content standards	5.3%
Teachers' ability to interpret math performance data	1.3%
Teachers' ability to appropriately use math performance data	2.7%
Teachers' openness to coaching	10.7%
Teachers' communication with parents about student math performance	1.3%
Alabama Summer Math Achievement Program	1.3%
Training provided to math coaches	0.0%
Training provided to teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	5.3%
Other	8.0%

Note. n=90

Table B-32 shows that nearly all responding LS principals performed all Alabama Coaching Framework elements as intended.

Table B-32. LS Principal Performance on Alabama Coaching Framework

Element	Performed As Intended
Perceive coaching as an inclusive endeavor.	98.9%
Communicate a clear and transparent commitment to improving instruction and student outcomes.	97.8%
Develop a shared vision of high-quality instruction and learning within the context of a coaching culture.	98.9%
Ensure the coaching process is monitored for fidelity to implementation.	95.6%
Maintain a clear separation between roles of principal and coach in the coaching process to facilitate the non-evaluative relationship between coach and teachers.	98.9%
Focus on the use of data to inform collaborative problem-solving and instructional decision-making as part of the continuous cycle of instructional improvement.	98.9%
Commit to a collaborative professional learning process with instructional coaches and teachers.	98.9%

Note. n=79

Most LS school principals were satisfied (44.4%) or somewhat satisfied (51.4%) with how the ANA is being implemented (see Table B-33).

Table B-33. LS School Principals' Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	44.4%
Somewhat satisfied	51.4%
Somewhat dissatisfied	4.2%
Dissatisfied	0.0%

Note. n=72)

Math Teachers

The ANA outlines 11 key tasks that K–5 teachers are required to perform to facilitate their students becoming high math achievers. As seen in Table B-34, virtually all responding math teachers reported understanding the requirements of their key ANA tasks (96.2%–99.1%), having received training to perform the tasks (93.7%–96.2%), having access to the necessary resources and supports (96.4%–98.4%), implementing the key tasks as intended (96.7%–98.4%), and implementation of their key ANA tasks helped achieve ANA's intended outcomes (96.0%–98.0%).

Table B-34. Math Teacher' Key ANA Task Ratings of Understanding, Training Received, Resources Access, and Intended Implementation and Outcomes

Math Teacher Key ANA Tasks	Understanding	Received Training/PD	Access Resources/Support	Intended Implementation	Intended Outcomes
Providing an average of 60 min per day of Tier 1 math instruction.	99.1%	95.8%	97.7%	97.8%	96.6%
Using only Elementary Math Task Force-approved mathematics curricula and quality print and online resources.	97.1%	93.7%	96.4%	96.7%	96.0%
Planning and developing units and lessons based on grade-level math content standards.	97.8%	95.7%	98.4%	98.4%	98.0%
Building students' fluency with math procedures based on conceptual understanding, strategic reasoning, and problem solving.	98.7%	95.7%	97.6%	98.2%	96.9%
Providing access to tools/technology that support mathematical thinking.	98.0%	95.1%	97.1%	98.2%	96.7%
Providing a learning environment that promotes student reasoning, student discourse, and student questioning and critiquing the reasoning of their peers.	98.4%	96.2%	98.0%	98.0%	97.3%
Implementing evidence-based teaching practices.	99.0%	95.8%	97.7%	97.8%	96.6%
Using evidence of student understanding to support planning next instructional steps.	98.8%	93.7%	96.4%	96.7%	96.0%
Providing descriptive and timely feedback to students that includes strengths, deficiencies, and next steps for progress toward learning targets.	98.0%	95.7%	98.4%	98.4%	98.0%
Avoiding practices that minimize sense making and understanding math concepts.	97.6%	95.7%	97.6%	98.2%	96.9%
Providing reports to parents/legal guardians that detail the strengths, deficiencies, and progress of students who received math intervention during the school year.	96.2%	95.1%	97.1%	98.2%	96.7%

Note. n=554

Table B-35 shows that at least two-thirds (63.4%–92.0%) of responding math teachers reported completing their key ANA tasks every day. The exception was that only slightly more than one-third (39.7%) of the math teachers reported they provided daily reports to parents/legal guardians about their students who received math intervention, while about the same number (32.1%) of math teachers reported providing such reports to parents once a month. Slightly more than one-quarter (28.4%) of the math teachers indicated they provide descriptive and timely feedback to their students once a week. Although required by the ANA, six (1.2%) teachers reported they do not provide an average of 60 minutes of Tier 1 math instruction each day.

Table B-35. Math Teachers' Frequency of Implementing Key ANA Tasks

Math Teacher Key ANA Tasks	Not Implementing	Implement Less than Monthly	Implement Monthly	Implement Weekly	Implement Daily
Providing an average of 60 min per day of Tier 1 math instruction.	1.2%	0.0%	0.8%	6.0%	92.0%
Using only Elementary Math Task Force-approved mathematics curricula and quality print and online resources.	0.2%	0.0%	0.6%	10.2%	89.0%
Planning and developing units and lessons based on grade-level math content standards.	0.6%	0.0%	0.6%	35.4%	63.4%
Building students' fluency with math procedures based on conceptual understanding, strategic reasoning, and problem solving.	0.6%	0.0%	0.4%	12.1%	86.9%
Providing access to tools/technology that support mathematical thinking.	0.6%	0.2%	0.4%	12.1%	86.7%
Providing a learning environment that promotes student reasoning, student discourse, and student questioning and critiquing the reasoning of their peers.	0.4%	0.0%	0.2%	8.4%	91.0%
Implementing evidence-based teaching practices.	0.4%	0.2%	0.4%	8.2%	90.8%
Using evidence of student understanding to support planning next instructional steps.	0.6%	0.0%	1.4%	22.9%	75.1%
Providing descriptive and timely feedback to students that includes strengths, deficiencies, and next steps for progress toward learning targets.	0.8%	0.8%	4.5%	28.4%	65.5%
Avoiding practices that minimize sense making and understanding math concepts.	1.6%	1.0%	0.4%	11.7%	85.3%
Providing reports to parents/legal guardians that detail the strengths, deficiencies, and progress of students who received math intervention during the school year.	2.2%	9.6%	32.1%	16.4%	39.7%

Note. n=489

Table B-36 shows that most (73.7%–95.8%) responding math teachers generally perceived that the various factors associated with ANA implementation did not need to be improved. However, slightly more than one-quarter (26.3%) of the math teachers indicated hands-on resources and materials could be improved. As seen in Table B-37, about one-quarter of the math teachers perceived that the availability of time was a major challenge to them implementing their ANA activities and tasks.

Table B-36. Math Teachers' Perceptions of Factors Needing Improvement and Barriers to Implementation

Factors	Needs Improvement	Barrier to ANA Implementation
Buy-in from school staff	8.4%	5.7%
Buy-in from math teachers	7.7%	4.1%
Hands-on resources and materials (e.g., teaching math standards, teaching number routines)	26.3%	9.5%
Math coach guidance/support (e.g., feedback, collaboration, performance data)	11.0%	3.9%
Appropriately interpreting student performance data	11.6%	6.1%
Appropriately using student performance data	13.8%	7.3%
Familiarity with state mathematics content standards	10.1%	4.7%
Aligning instruction to the state mathematics content standards	13.7%	5.8%
Guidance for providing Information to parents (e.g., student math achievement reports)	15.4%	6.4%
Availability of school staff to support ANA activities/tasks (e.g., limited availability of math coach, lack of math interventionist)	14.7%	8.9%
Availability of district/LEA staff to support ANA activities/tasks	4.2%	2.7%
Availability of time to implement ANA activities/tasks (e.g., time for tiered instruction)	20.2%	16.0%
School-level infrastructure for implementing ANA activities/tasks	8.4%	4.9%
Training provided to math coaches	5.0%	2.7%
Training provided to math teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	18.1%	9.7%
Other	5.5%	4.3%

Note. n=739

Table B-37. Factors Perceived as Challenge for Math Teachers Implementing ANA

Factors	Seen as Challenge
Buy-in from school staff	2.0%
Buy-in from math teachers	1.5%
Hands-on resources and materials (e.g., teaching math standards, teaching number routines)	8.8%
Math coach guidance and support (e.g., feedback, collaboration, performance data)	1.8%
Appropriately interpreting student performance data	3.8%
Appropriately using student performance data	3.8%
Familiarity with state mathematics content standards	3.1%
Aligning instruction to the state mathematics content standards	5.3%
Providing information to parents (e.g., student math achievement reports)	4.2%
Availability of school staff to support ANA activities/tasks (e.g., limited availability of math coach, lack of math interventionist)	4.9%
Availability of district/LEA staff to support ANA activities/tasks	0.9%
Availability of time to implement ANA activities/tasks (e.g., time for tiered instruction)	27.9%
School-level infrastructure for implementing ANA activities/tasks	3.5%
Training provided to math coaches	0.9%
Training provided to math teachers (e.g., instructional strategies, administering screening or diagnostic assessments)	10.4%
Other	17.3%

Note. n=452

Table B-38 shows that nearly all responding math teachers performed all Alabama Coaching Framework elements as intended.

Table B-38. Math Teacher Performance on Alabama Coaching Framework

Element	Performed As Intended
Demonstrate a willingness to continually reflect and improve teacher practices to change outcomes for all students.	98.9%
Participate in a collaborative professional learning process with school leadership, the instructional coach, and colleagues.	98.4%
Embed the continuous cycle of instructional improvement in reflective practice and instructional decision-making informed by data.	99.2%
Expand personal knowledge base of instructional improvement practices through evidence-based resources.	98.9%
Honor the coaching process by committing to a collaborative coaching cycle which includes identifying areas of need or refinement, implementing an instructional plan or response, and integrating insights or learning into practice.	98.4%

Note. n=452

Table B-39 shows that most math teachers indicated they were satisfied (44%) or somewhat satisfied (49.8%) with how the ANA is being implemented.

Table B-39. Math Teachers' Satisfaction with ANA Implementation

Level	Satisfaction
Satisfied	44.0%
Somewhat satisfied	49.8%
Somewhat dissatisfied	4.9%
Dissatisfied	1.3%

Note. n=452

Summary of Key Findings

Of the five key stakeholder types, all the regional coordinators (100%) and about two-thirds or more of LEA staff, FS and LS school principals, and math coaches responded to the survey. The lowest participation was from the math teachers; only about one-fifth of math teachers responded to the survey, making the results for this stakeholder type less generalizable to the population of K–5 math teachers in Alabama's FS and LS schools. On average, the regional coordinators and math coaches reported working about one and one-half years in their current positions while the average tenure of responding LEA staff and math teachers was approximately 10 years.

Most regional coordinators reported understanding their key ANA tasks, having received training on how to perform their tasks successfully, and having access to the necessary resources and supports to fulfill their ANA responsibilities. The regional coordinators reported the least understanding, training, and access to their key task related to monitoring implementation of MTSS. Across their ANA tasks, they reported performing most of them either weekly or monthly. Most regional coordinators perceived they are implementing their ANA tasks as intended and their implementation of those tasks leads to achieving intended outcomes. About three-fourths of the regional coordinators indicated that buy-in from district leadership, availability of district/LEA staff to support ANA activities and tasks, and district-level infrastructure for implementing ANA need to be improved. About three-fourths of the regional coordinators cited buy-in from district leadership as a barrier to ANA implementation. Nearly all responding regional coordinators reported performing all Alabama Coaching Framework elements as intended. Most responding regional coordinators indicated they were satisfied or somewhat satisfied with ANA implementation.

Responding LEA staff indicated they understand their key and annual data reporting tasks. They also reported that they received training and have access to the necessary resources and support to perform their tasks effectively, with one exception. Only about one-quarter of the LEA respondents reported being trained on and having the necessary resources and support to use a fractional reasoning screener. Most LEA respondents perceived that they implemented their key tasks as intended, and their performance contributed to intended ANA outcomes, except for the tasks involving a fractional reasoning screener. Of the various intervention services and supports the LEA staff provide to students identified with a math deficiency, most reported daily implementation of ensuring K–5 students (a) work with an effective math teacher; (b) receive effective math instruction to accelerate their progress, are provided an environment to make sense of cognitively demanding tasks, receive justification for math problem solving, make connections with math, and receive feedback about math ideas; (c) receive math intervention services and supports to improve an identified math deficiency; and (d) receive intensive math interventions when a math deficiency is identified. Almost three-fourths to about half indicated they do not implement intervention services and supports associated with the fractional reasoning screener. Slightly less than half the LEA respondents indicated the math teachers' openness to coaching need improvement and slightly more than a quarter cited the teachers' lack of openness was a barrier to implementing the ANA. In addition, a large percentage of LEA respondents reported the teachers' familiarity with state math content standards, the teachers' ability to align instruction with the math content standards, and the teachers' openness to coaching need to be improved. The LEA respondents did not perceive any challenge so major that it became a barrier to implementing the ANA. Nearly all responding LEA staff reported performing all Alabama Coaching Framework elements as intended. Most LEA respondents indicated they were satisfied or somewhat satisfied with how the ANA is being implemented.

Most responding math coaches indicated understanding their key ANA task, receiving training to successfully perform their tasks, having access to the necessary resources and support, and implementing their key ANA tasks as intended. Most also perceived that their implementation of the key tasks leads to achieving ANA's intended outcomes. The only exception was assisting teachers to administer the fractional reasoning screening assessment or diagnostic assessments. All responding math coaches reported that they mentor and coach math teachers as well as focus solely on their role as math coach every day. Slightly more than two-thirds indicated they do not assist teachers in administering fractional reasoning screener assessments or diagnostic assessments. A small percentage of math coaches reported not assisting teachers in using data to differentiate math instruction and identify students with dyscalculia and not supporting teachers to integrate computer science and computational thinking concepts into math classrooms. Across their tasks, about half the math coaches reported performing three key ANA tasks once a month, and about half to slightly less than three-fourths reported performing two key tasks less than once a month. Most reported they perform their other key ANA tasks daily or weekly. Slightly more than half of responding math coaches indicated the teachers' familiarity with the state math content standards and the teachers' ability to align instruction to the standards need to be improved; about one-third also reported these as barriers to ANA implementation. Additionally, about one-third indicated the need to improve teachers' ability to use math performance data, *Monday.com*, training provided to math teachers, and buy-in from math teachers. Nearly all responding math coaches reported performing all Alabama Coaching Framework elements as intended. Most responding math coaches reported being satisfied or somewhat satisfied with how the ANA is being implemented.

A large percentage of FS and LS school principals reported understanding their ANA responsibilities, receiving training to perform their tasks, and having access to the resources and support they need to perform their ANA responsibilities. Across their designated ANA tasks, FS school principals reported performing most on a daily, weekly, or monthly basis, while LS school principals reported performing more of their key ANA tasks every day. Although required by ANA, a small percentage of the (a) FS and LS school principals reported not using approved math curricula for core instruction and (b) FS school principals reported not using approved formative assessments, screeners, and diagnostic assessments. Approximately one-third to one-quarter of responding FS school principals reported that teachers' familiarity with state math content standards, teachers' ability to align instruction to state math content standards, and teachers' ability to interpret math performance data, district-level infrastructure, teachers' openness to coaching, teachers' communication with parents about student math performance, and training provided to teachers need to be improved. Two-fifths to slightly more than one-quarter of the LS school principal respondents reported that the training provided to teachers,

teachers' ability to align instruction to state math content standards, availability of time, teachers' familiarity with state math content standards, teachers' ability to use math performance data, teachers' ability to interpret math performance data, and teachers' openness to coaching need improvement. Nearly all responding FS and LS principals reported performing all Alabama Coaching Framework elements as intended. Almost all the FS and LS school principals indicated they were satisfied or somewhat satisfied with how the ANA is being implemented.

Virtually all responding math teachers reported understanding the requirements of their key ANA tasks, having received training to perform the tasks, having access to the necessary resources and support, implementing the key tasks as intended, and their implementation of key ANA tasks helped achieve ANA's intended outcomes. At least two-thirds of responding math teachers reported completing their key ANA tasks every day. The exception was that only slightly more than one-third reported they provided daily reports to parents/legal guardians about their students who received math intervention, while about one-third reported providing such reports to parents once a month. Although required by the ANA, a small percentage of the teacher respondents reported they do not provide an average of 60 minutes of Tier 1 math instruction each day. Most responding math teachers generally perceived that the various factors associated with ANA implementation did not need to be improved or were not a barrier to implementation. However, about one-quarter to one-fifth indicated that the hands-on resources and materials, availability of time, and training provided to math teachers need to be improved. Most math teachers indicated they were satisfied or somewhat satisfied with how the ANA is being implemented.

Appendix C: Summary of ANA Focus Groups

Background

HumRRO conducted separate (a) in-person focus groups with parents and students and (b) virtual focus groups with regional coordinators, local education agency [LEA] staff, math coaches, principals, and math teachers. We invited a sample of parents and a sample of grades 3–5 students to participate in separate focus groups at each full- and limited-support (FS/LS) school we visited in fall 2024. In spring 2025, we invited all regional coordinators, LEA staff, math coaches, principals, and K–5 math teachers at all FS/LS schools to participate in separate focus groups. We provide separate summaries below of the key findings from each stakeholder group.

Regional Coordinators

In March and April 2025, 22 regional coordinators (RCs) provided insight into supporting and monitoring implementation of the Alabama Numeracy Act (ANA). These RCs identified the Depth of Implementation (DOI) process as one of the most helpful components of the ANA process. The DOI process creates rubrics aligned to Tiers 1, 2, and 3 of instructional implementation (scored on a 0–3 point scale) that enable coordinators to conduct classroom observations and then develop subsequent support plans with administrators and coaches. They find using *Monday.com* to track support plan progress, coaching cycles, and pre- and post-coaching data to be valuable. They also hold monthly monitoring meetings with principals and coaches to keep implementation efforts aligned and focused on shared priorities. Coordinators benefit from collaborative learning opportunities where small groups of RCs share progress feedback and work together on emerging challenges, creating valuable peer learning across regions.

Some RCs indicated that interconnected challenges complicate their ability to effectively support implementation. Data access and timeliness represent foundational obstacles; coordinators are expected to monitor multiple data sources (e.g., Alabama Comprehensive Assessment Program [ACAP], i-Ready, school-level benchmark assessments, numeracy screeners), yet they frequently lack direct access to these databases. When data are eventually provided, they often arrive too late to inform timely instructional decisions. Staff retention and turnover create substantial disruptions; when principals, teachers, and/or coaches change positions mid-year, coordinators must restart support and training processes. The volume and complexity of ANA components drive coordinators to regularly review which topics (e.g., Multi-tiered Systems of Support [MTSS], Professional Learning Communities [PLCs], training) to prioritize. Regional and district-level leadership dynamics complicate their work; personality differences among leaders, varying openness to external coaching, and hierarchical structures can be intimidating and impact implementation success. Additional systemic challenges include disjointed understanding and implementation of MTSS systems across regions and the RCs' need to develop expertise in monitoring multiple math curricula (e.g., i-Ready, Envision).

The RCs reported using multiple data sources to inform coaching recommendations, though access barriers constrain consistency across regions. Coordinators analyze results-based coaching data to document pre- and post-performance of coached versus non-coached teachers, use i-Ready data to track student movement through intervention tiers and assess coaching effectiveness, and employ ACAP results and mid-year benchmark data to develop targeted support plans. However, a disparity exists in coordinators' data access capabilities; those with direct, real-time access to i-Ready dashboards can filter student data by performance level and provide highly individualized support, while coordinators without direct access must rely on coaches or administrators who often provide unorganized data that are difficult to interpret without context.

RCs expressed that deeper, more intensive preparation before rollout of new curricula, interventions, or other components of ANA would substantially improve their ability and confidence to support schools. There is also a need to improve consistency in messaging so that regions and schools are on the same page when new information, resources, and systems are disseminated. Alabama Math, Science, and Technology Initiative (AMSTI) specialists are overextended given the recent increase in math coaches, as coaches rely on AMSTI specialists to provide on-the-job training. They also shared that AMSTI districts can no longer financially provide manipulatives as part of their training for districts; as a result, district participation in such trainings are disincentivized.

RCs reported implementing multiple strategies to build district leadership engagement, including professional learning opportunities specifically designed for district leaders through the *Counting on You* series and dedicated ANA days for district leaders. While some RCs reported that *Counting on You* helped deepen content knowledge and role clarification to district leaders, others reported minimal turnout. Additional suggestions to improve district engagement include tying funding to attending required district leader meetings, dedicating Office of Mathematics Improvement (OMI) resources/time to specifically focus on district-level work, and identifying a liaison within each district who meets with RCs and serves as an ANA advocate.

District engagement challenges also vary by region size and district structure. RCs in smaller districts reported being welcomed into superintendent meetings and building genuine community relationships, while large districts present formidable barriers where hierarchical structures can feel threatening to district leaders. Coordinators shared successful strategies including maintaining direct relationships with district personnel rather than communicating solely through superintendents and creating district newsletters to share information. However, there are limits to these approaches. For example, despite multiple outreach efforts and invitations, some large district leaders do not participate, limiting coordinators' ability to influence district-level decision making.

RCs reported observing multiple positive outcomes, including that schools now prioritize math equally to reading. The structure and consistency of ANA implementation has produced outcomes where schools have increased daily math instruction; teachers use approved, evidence-based curricula; and RCs observe student growth on key indicators during their classroom walkthroughs. However, negative outcomes include principal disengagement where some view ANA and math coaching as work between RCs and coaches rather than a component of collaborative leadership, the need to increase the amount of time dedicated to PLCs in schools, and teachers feeling that their students are over-assessed.

RCs expressed overall satisfaction with ANA's accomplishments, emphasizing the significance of accomplishing comprehensive systemic changes through coordination of multiple state departments, hiring and training numerous math coaches, and developing professional learning infrastructure. While there have been some “bumps” that may continue for several more years as systems mature, implementation has been smoother this year compared to previous years, suggesting initial growing pains are diminishing, with relationships between RCs strengthening into more cohesive teams and relationships with school administrators and coaches deepening over time.

LEA Staff

In March and April 2025, 11 local education agency (LEA) staff provided feedback about ANA math intervention services, using student performance data, managing professional development, and addressing barriers to effective implementation. These LEA staff noted that math coaches have been instrumental in planning intervention services, helping staff understand student data (e.g. early numeracy screener data), and developing intervention plans collaboratively with teachers. Implementing MTSS has been effective, with staff from one LEA stating that they have had more intentional conversations about Tier 1 instruction because there are so many students identified with needs. Relationships between coaches and teachers have improved significantly as comfort levels increase. A critical challenge regarding MTSS implementation involves the "upside-down pyramid," where there are more students who need intensive interventions (Tier 3) than there are students who only need core instruction (Tier 1). Because schools' intervention capacity cannot serve all those identified with deficiencies, students with the highest needs are prioritized (based on ACAP, screeners, and formative benchmark assessments). Small and rural districts face challenges implementing MTSS. For example, without large enough student populations to justify an intervention unit, some schools swap out their grade levels so that the intervention is provided by a different teacher. LEA staff indicated a preference prefer that coaching be combined with direct student intervention, particularly for under-resourced districts who do not have funding for an interventionist.

LEA staff reported using student performance data to inform their feedback to teachers. Data meetings occur as PLCs, beginning-of-year (BOY) sessions, progress monitoring, and problem-solving team (PST) meetings. Teachers participate in these meetings, where they are encouraged to take ownership of their classroom's data, identify mastery gaps for their students, and create data-informed math improvement plans. They use the PLCs to incorporate reflection and hold conversations around performance data, with teachers discussing teaching struggles, exploring different approaches, and modeling for colleagues to develop efficacy. LEA staff indicated they cross-reference student performance data with the proficiency scales to ensure teachers' instruction is at the higher levels of proficiency (level 3 or 4) for math standards.

LEA staff recommended combining ANA and Alabama Literacy Act (ALA) training into a single day to reduce educators' time away from schools. LEA staff noted that core trainings such as course of study, foundational math, and fractional reasoning are not offered frequently enough throughout the summer/year. They also stated that teachers need more time to integrate their knowledge gained during ANA training, as the pace of implementation seems to be too rapid. Giving more time for teachers to implement their training may facilitate and increase their buy-in and overall understanding of ANA. Relatedly, LEA staff reported that substitute shortages prevent teacher attendance in professional development and staff turnover creates a cycle of retraining new staff.

LEA staff opined there are additional training needs for teachers, including deeper understanding of math standards and what instruction should look like across intervention tiers. They noted that teachers demonstrate lower confidence and lack content knowledge in teaching math compared to reading. While schools have obtained necessary curriculum resources and manipulatives, teachers need instruction on teaching standards differently than what has been done historically. Having teachers and math coaches together at the same training would ensure consistent information is received rather than coaches translating training to teachers. LEA staff indicated that the timing of training for coaches creates barriers for teachers. Coaches are trained from August to October, leaving teachers without coaching support for the first few months of the school year, which is particularly challenging for teachers who are new to the profession.

LEA staff reported that some large districts have insufficient coach-to-school ratios, with AMSTI support stretched thin serving these districts. There is a limited number of professional development days per year, making it difficult for teachers to meet both ALA and ANA requirements. The state's funding for the Alabama Summer Math Achievement Program represents only a fraction of actual implementation costs, with districts needing to spend substantially more than state funding provides. LEA staff recommended developing an ANA train-the-trainer component as this might alleviate some issues created by high staff turnover.

LEA staff shared numerous positive outcomes from ANA implementation, including a more balanced focus on math and reading, improved student engagement, increased motivation, and better skill building. Small group instruction has increased with students working collaboratively. State funding for coaches provides resources schools might not otherwise have. They also shared several negative outcomes from ANA implementation, including the need to develop separate improvement plans for students identified with both literacy and math deficiencies. Documentation requirements for *Monday.com* creates accountability pressure, distrust, and the feeling that ANA requirements drive the coaching too much. Some LEA staff perceived that the breadth of ANA implementation exceeds its depth, such that assessment demands leave insufficient time for instruction. Overall, LEA staff expressed that implementation is working, but improvements are needed in staffing, training, and allocating resources for ANA to be more effective.

Principals

In May 2025, 11 principals provided feedback about establishing coaching cultures, monitoring implementation, managing professional learning, and implementing MTSS within their schools. These principals opined that a strong coaching culture is one that emphasizes support and professional learning rather than evaluation. Principals who reported effective coaching described cultures of trust, partnership, and collaboration built on growth mindset philosophies where multiple perspectives strengthen practice. To normalize coaching across all teachers, some principals implemented strategies such as having effective teachers participate in coaching cycles first to demonstrate that coaching helps all teachers improve, not only novice teachers or those who are less effective. Peer observations, where teachers visit colleagues' classrooms, help to establish coaching as normal practice.

Principals reported monitoring coaching fidelity through weekly standing meetings with coaches, maintaining ongoing shared documents tracking coaching activities, and using Sweeney's results-based coaching model, which emphasizes using data to facilitate growth in deficient and strength areas. Several principals shared that they meet monthly with regional coordinators to review progress and ensure alignment with regional expectations. Instructional team meetings with both reading and math specialists help ensure coaching is distributed appropriately and coaches are not burning out from working with the same teachers repeatedly.

Principals indicated encountering relatively limited teacher resistance to professional development, though logistical barriers exist. Funding and travel for professional development present significant challenges, particularly in large regions that require longer commutes. Scheduling conflicts between trainings and overnight travel requirements create participation barriers. Time tends to be the primary constraint; multiple trainings over days or weeks create substantial demands on teachers' time. Another significant and related barrier involves finding substitute teachers; when multiple teachers attend a training session, schools struggle to maintain coverage. Principals noted that summer is the best time to offer workshops as this timing provides teachers with more time to absorb information and receive stipends. Some principals expressed that training is not sufficiently differentiated. They noted current training involves new teachers and coaches and veteran teachers, with each having different needs yet they receive that same professional development. Principals also emphasized that administrators need more training to support ANA implementation effectively.

Principals consistently reported positive impacts from approved curricula and intervention. They stated that math now receives priority equal to reading, representing a significant cultural shift. Teachers have clear maps through curricula and remain on the same page across grades, creating accountability and consistency in teaching methods. Intervention programs have produced particularly positive results; screening students and identifying specific skill gaps allow for implementation of targeted intervention to address students' deficiencies. Examples of success include students dismissed from Tier 3 intervention and upward trends in assessment scores. One principal noted that approved intervention programs serve below-grade-level learners better than general curriculum-embedded intervention components.

Principals reported that the approved formative and screening assessments provide concrete benefits for making intervention decisions. These assessments allow schools to identify gaps sooner and address them more quickly, preventing weeks-long delays in providing student support. Some principals emphasized that teachers need to use assessment platforms to their fullest potential, as they can be used to group students by specific learning if used effectively.

Principals identified insufficient funding and staffing as primary barriers to effective MTSS implementation. Hiring interventionists requires significant resource reallocation. Principals consistently emphasized that funding for interventionists is as critical as funding for coaches, yet the state mandated interventionist positions through law without providing funding, requiring schools to reallocate existing resources or operate without direct student intervention support

One principal reported discovering that Tier 2 intervention was not happening correctly and planned to establish protected math block time next year. When intervention occurs through pullout rather than classroom-based models, teachers tend to communicate less about these students and the interventions they are provided. This also results in personnel certification challenges, with principals noting instruction is less effective with uncertified staff.

Principals identified several recommendations to improve training. They suggested offering differentiated training based on experience level rather than the current one-size-fits-all approach. They also suggested that training should be brought to schools rather than requiring teachers to leave campuses, as schools struggle to find substitutes, particularly when multiple teachers need simultaneous training. One principal mentioned a school's proximity to AMSTI and suggested a two-day annual summit where teachers could attend multiple sessions, which could increase accessibility compared to requiring external travel. Financial resources to support travel and professional development would enable schools to participate without depleting intervention funding.

Principals suggested that human resources represent the most critical gap in implementing ANA successfully. Principals emphasized that ideal support includes interventionists funded alongside coaches. However, one principal expressed satisfaction with supports received, noting strong district and regional support visiting regularly to work with coaches, offer feedback, and help create action plans. This disparity suggests support availability varies significantly by region.

Principals reported substantial positive outcomes from ANA implementation, including visible evidence throughout schools, from instruction in the classroom to family communications, that math matters. Math instruction delivery has improved significantly, and teachers are shifting their focus back to math. Schools are experiencing achievement growth, with students leaving lower grades better prepared for higher grade content. However, some principals expressed frustration that educators had no input creating the law, suggesting policymakers lack understanding of school realities. They reported that meeting both ANA and ALA requirements simultaneously is frustrating. They stated there needs to be better alignment among the organizations that oversee ANA implementation. They expressed frustration in schools shouldering the bulk of ANA implementation, with little coordination coming from the state or district.

Principals shared that some teachers still express anxiety about ANA implementation, though overall sentiment is positive. ANA has revealed existing gaps in student learning; students do not leave kindergarten with foundational skills mastered, and these gaps compound through elementary grades. Principals expressed moderate to high satisfaction, though primary concerns include administrative burden from multiple software systems creating redundancy in data reporting. Principals appreciated collaborating with other leaders across the state, learning that their concerns are similar and sharing ideas for resolution. However, principals noted that some ANA policymakers may lack understanding of actual implementation challenges and ground-level realities. Overall, principals recognize ANA's positive direction while emphasizing the need for better resource alignment, streamlined processes, and sustained funding for interventionists alongside coaches.

Math Coaches

In May 2025, 35 math coaches shared their perspectives about effective coaching, building productive relationships with teachers, and ANA implementation. Most of these coaches stated that building and maintaining supportive relationships with teachers is the most fundamental aspect to successful coaching. They consistently reported employing relationship-building strategies (e.g., providing snacks and treats, celebrating birthdays, conducting initial surveys to understand needs) to help build rapport. They also emphasized the need to build trust with teachers by being transparent about their own learning experiences, including mistakes they have made, and clarifying their position as resources and thought partners rather than evaluators. Many coaches perceived that building relationships is easier with new teachers who are open to receiving support, while veteran teachers require more time and patience to develop trust and rapport.

The math coaches identified collaborative planning and co-teaching as the most effective aspects of a coaching cycle. They shared that teachers particularly valued when they demonstrated lessons in real-time, using manipulatives to teach a concept, or assisting with small groups. They reported the planning sessions are highly valuable, as the teachers appreciate their guidance related to teaching the standards and brainstorming appropriate instructional strategies. Many coaches found that micro-modeling or side-by-side teaching was more effective than traditional modeling, as it allowed teachers to provide instruction to their students while receiving support. They shared that the debriefing sessions and teacher-to-teacher observations were beneficial for professional growth and building teacher confidence.

The coaches perceived time constraints as the biggest challenge to implement effective coaching cycles. They stated they do not have enough time during regular school hours to plan, collaborate, and debrief with teachers during regular school hours, so they often work evenings and weekends to provide adequate support. The coaches who serve multiple schools find it especially challenging to find the time needed to maintain continuity in their coaching relationships and follow through on coaching cycles. Other challenges include helping teachers show evidence of student learning, managing the administrative burden of documentation requirements through *Monday.com*, and providing feedback to teachers that is strength-based rather than evaluative.

The coaches identified several critical training topics and resource needs to improve the teachers' implementation of ANA. The most frequently mentioned need was additional time for teachers to attend professional development during the school year rather than summer. Many coaches mentioned having difficulties securing substitute teachers for training attendance. The coaches also emphasized that teachers need more content knowledge training, particularly regarding math standards and how to effectively use manipulatives in instruction. Several coaches suggested that lead teachers should accompany them to AMSTI training so that they can help support other teachers. They noted the need for basic instructional training, as there is often an assumption that teachers understand what effective math instruction looks like when this is not always the case.

The coaches generally found ANA-required training useful and implemented strategies they learned in their daily coaching practice. The Ongoing Assessment Project (OGAP) training and coaching academy sessions were particularly valued for providing practical strategies that could be immediately implemented with teachers. However, several coaches noted that some training, such as one on evidence-based practices, was overwhelming and too fast-paced, especially for first-year coaches. They expressed that the training they received sometimes felt idealistic, assuming all students were on grade level and all teachers were cooperative, which did not reflect the realities of their coaching contexts. The coaches who started mid-year shared their frustration of missing foundational training sessions that were not repeated.

When asked to give suggestions on how to improve teachers' familiarity with state math standards and alignment to instruction, coaches offered several systemic changes. Many emphasized the need to streamline resources and noted that there are discrepancies between jargons used in different state documents such as instructional supports, proficiency scales, and course of study materials. They recommended that the state develop a unified, standards-based curriculum that eliminates guesswork for teachers and ensures proper alignment. Several coaches noted that teachers often teach directly from adopted curricula without considering alignment to the standards. They suggested that teachers be given dedicated time built into school days to work collaboratively on understanding standards and creating appropriate pacing guides.

The coaches reported both positive and negative outcomes based on ANA implementation. Positive outcomes included increased attention and respect for math instruction, with math no longer being treated as secondary to reading. They observe greater use of manipulatives, increased focus on small group instruction, implementation of number sense routines, and noteworthy gains in student math proficiency rates in some schools. The numeracy screening assessments were viewed positively for helping identify students' skill gaps and needs early in the school year. Negative outcomes reported by the coaches include increased pressure on teachers due to multiple documentation requirements, teacher burnout from competing initiatives, and concerns that the focus on elementary grades leave middle school math unsupported in consolidated schools.

The coaches' satisfaction with ANA implementation varied. While most appreciated that math is receiving appropriate attention and teachers are becoming more intentional about math instruction, several coaches expressed concerns about implementation challenges. They wish ANA had been rolled out in phases to avoid overwhelming teachers and noted that high teacher turnover means constantly retraining new staff on ANA requirements. They emphasized that successful implementation requires adequate support and resources, which can vary from one school to another, and there is a need for realistic expectations about what they can accomplish with limited time and large student populations. Despite the challenges, many coaches are optimistic about long-term improvements in mathematical instruction and student outcomes.

Teachers

In May 2025, 10 teachers provided insight into how the ANA is being implemented in Alabama's classroom. These teachers identified number sense routines and number talks as one of ANA's most valuable components for helping struggling students learn math. Number talks help students think conceptually about numbers, develop math reasoning through discussion, and build confidence in supportive environments. Teachers emphasized that number talks are particularly effective in primary grades where visual learners benefit from seeing manipulatives and hearing peer strategies. They suggested these routines help students with speech deficits participate comfortably in math. Personal attention from math coaches, combined with structured planning templates, manipulatives, and math games, create additional support systems for struggling learners. However, challenges remain because of implementation limitations, such as insufficient manipulatives for all students, limited readily available math task resources beyond approved curricula, and for online teachers, the need for coaches with specialized virtual instruction experience.

Teachers reported using multiple mechanisms for communicating with parents, including i-Ready reports, summative assessments, weekly progress reports, and newsletters. Teachers noted that involved parents understand skill gaps and support the child's learning at home, while other parents do not engage with materials sent home. One barrier to parent engagement in their child's math education is a limited understanding of current math instructional approaches; parents struggle to understand how math is currently taught, so they have difficulty supporting their child's learning through number talks, manipulatives-based strategies, and other activities their child engages in at school.

Most teachers' experiences with their coaches were positive. In strong coaching cultures, coaches are readily available, enthusiastic, provide targeted and individualized support to teachers, openly share ideas and resources with their teachers, engage well with teachers' students, and are well-integrated into school communities. However, one teacher noted that their experience with their coach was more transactional and not as collaborative; they suggested this may be because they are a senior teacher.

Teachers cited receiving coaching support in three core areas: planning assistance where coaches help teachers cover required components while deciding instructional priorities; modeling lessons and co-teaching; and resource provision including supplemental materials and manipulative access. Teachers appreciated their coaches' support to interpret formative assessment data, identify intervention needs, and maintain focus on teaching grade-level standards.

Some teachers reported shifting to more inquiry-based feedback where they ask students to explain their thinking and justify reasoning, encouraging deeper math thinking and creating a safe space for students to talk through their problem-solving process. Coaching helped some teachers present feedback in more student-friendly language and build student confidence. However, not all teachers reported substantial changes in their practices, suggesting variability in how coaching impacts how teachers provide student feedback.

Teachers primarily measure coaching effectiveness through indirect student outcome measures—pre- to post-test growth, engagement levels, attitudes toward math, and overall academic progress. One teacher reported using a rubric to provide their coach with feedback after they modeled a lesson. However, formal coaching evaluation systems appear inconsistent across schools, with most teachers relying on informal observations of student progress rather than structured assessments of coaching quality.

Teachers reported insufficient time for math instruction and large teacher-student ratios as major barriers to teaching effectiveness. Large class sizes impede teachers' ability to meet with all students in small groups. Teachers requested more focused professional development on specific topics like number balance, math games and math proficiency scales, along with concrete implementation materials. Teachers reported having abundant resources but insufficient time to fully implement coaching feedback, including a lack of planning time during the workday.

Some teachers use early numeracy screening assessment data to identify skill deficits, group students for targeted instruction, and determine appropriate intervention content.
Other teachers noted that use of screening assessment data usage is inconsistent or infrequent across grades and schools, with some teachers just beginning to use screeners, suggesting the potential for use of this data to guide instruction is not yet fully realized.

Teachers shared several positive outcomes from ANA implementation, including math receiving renewed priority equal to literacy and students more engaged and excited about math when using manipulatives and student-centered strategies. Negative outcomes identified by teachers include increased administrative burden and frustration using Unified Insight. Teachers also expressed concerns about excessive assessment frequency and its emotional impact on students.

Teachers reported varied satisfaction with ANA implementation, with the level of their satisfaction closely tied to having adequate coaching support, clear systems and training, sufficient instructional time, and active administrative support. Teachers recognized that ANA represents meaningful progress despite challenges and acknowledged that systemic change requires time, with most expressing that implementation has become progressively smoother and expressing underlying optimism about ANA's trajectory despite bureaucratic burdens.

Parents

In fall 2024, 30 parents provided their perspectives about the ANA, the impacts it is having on their students, and their level of satisfaction so far in its implementation. Parents expressed that they had limited initial awareness of the Alabama Numeracy Act (ANA), with most learning about it eventually through school meetings or parent nights. Those who knew about ANA shared that they learned about it during the previous school year and often compared ANA to the literacy act. Parents who worked as educators or had spouses in education were more likely to be aware of the program, while those working outside schools often had minimal knowledge of ANA's implementation and objectives. Many parents expressed that initial communication about ANA was insufficient and requested more detailed information about the program's goals and implementation strategies.

Parents reported that mathematics instruction has become significantly more challenging and rigorous since ANA implementation, with formal math instruction now beginning as early as kindergarten. They noted that their children's grades sometimes declined as the work became more difficult, with students bringing home less homework but completing more challenging work in school. Parents also noticed that there has been a shift from a more traditional textbook-based learning to focusing more on multiple problem-solving strategies. They see how students are now expected to understand the "why" behind mathematical concepts and to show their work processes rather than just give the correct answers. Furthermore, parents observed increased use of manipulatives, technology platforms such as I-READY and Clever, and more collaborative learning approaches where students work together on problem-solving activities.

Despite recognizing that the new approach to math instruction shows potential benefits, parents expressed frustration with their inability to help children with their homework because the current methods to solve mathematical problems differ from how they learned mathematics. Parents frequently described situations where children would say "that's not how the teacher taught us" when they tried to assist with homework, leading many parents to feel helpless in supporting their children's learning. The shift from using textbooks with examples to worksheets and digital platforms also made it challenging for parents to help as they no longer have access to reference materials they could use to understand new problem-solving methods. Some parents with older children noted that the older siblings had become more of the primary source to help with homework, as they were more familiar with what many parents refer to as “new math”.

Communication between schools and families varied in both quality and frequency across different schools. Some schools employed multiple communication methods including Class Dojo messages, PowerSchool grade access, newsletters, progress reports, and parent-teacher conferences, while others did not provide much feedback aside from basic progress reports. Parents reported mixed satisfaction with their school’s communication regarding their children’s math instruction; some parents received detailed daily updates about their children's progress while others felt communication was sparse, particularly regarding specific mathematical performance and instructional strategies. Many parents shared that they would like more proactive communication from teachers about incomplete assignments and areas where their children were struggling.

Parents also consistently mentioned the resource gaps that hindered their ability to support their children’s learning at home. Many requested workshops or "math nights" to learn about current instructional methods, step-by-step examples of problem-solving strategies, pacing guides, and access to the same digital resources used in schools. Additionally, parents expressed strong interest in summer programs or parent classes that would help them understand the new mathematical instructional practices. Families in rural areas reported having more challenges with limited internet connectivity affecting access to digital learning platforms, especially when parents cannot see what their children were learning because student Chromebooks must remain at schools. Parents also expressed concerns about conflicting problem-solving methods between schools, homes, and tutoring centers, which could potentially be more confusing to students who needed to demonstrate specific strategies they learned in class.

Parents shared that they are both optimistic and concerned about ANA's long-term impacts. Many parents hoped that the increase in academic rigor would improve their children’s mathematical proficiency over time. They also appreciate that teachers are more focused on helping students understand concepts rather than just on how to get the right answer. However, parents are worried about increased student stress and anxiety around standardized testing, with some being concerned that their children will be held back based on test performance despite classroom success. Some parents noted that school had become less enjoyable and more stressful for their children, with education feeling more focused on testing than learning. Furthermore, parents communicated that the emphasis on mathematics and reading could diminish attention to other subjects, with some showing concerns that it would prevent their children from having a more well-rounded education.

Parents recognized that successful implementation required deep involvement and support from higher administrative levels, not just individual teachers and principals. Nonetheless, they are concerned about the implementation quality and resource equity, noting disparities in support and resources between different schools. Some parents felt their schools lacked support from district leadership compared to other schools in their areas. They also expressed frustration that their children's teachers appeared to be stretched thin with the implementation of these new methods. While many parents appreciated seeing more mathematical interventions and support for struggling students, they also noticed that lack of resources affected the consistency and quality of these interventions.

Overall, parents recognized the potential benefits of the new mathematical instruction brought forward by ANA. They appreciated that the approach emphasizes conceptual understanding and prepares students with stronger mathematical foundations for the future. However, parents emphasized that successful implementation depends on addressing several critical concerns. They highlight the need for better communication between schools and families, more comprehensive parent education programs to help them support their children's learning at home, and more equitable resource distribution across different schools and districts to ensure all students benefit from ANA implementation.

Students

In fall 2025, a total of 113 students provided feedback about what they like and dislike about math, how math instruction has changed in the past year, and how their teacher and parents support their math learning. Students across all grade levels shared various math topics that they like learning about, such as multiplication, skip counting, fractions, and more. They show strong preferences for more interactive math instruction, and consistently mentioned enjoying math games, working with classmates, and using manipulatives like base 10 blocks, fraction strips, and arrays to visualize their math problems. Students also enjoyed using technology programs such as i-Ready and Prodigy to practice the math skills they are learning in the classroom. In addition, many students valued working together with their classmates during number talks and doing group problem-solving activities. Several students mentioned that having teachers show multiple strategies for solving problems was particularly helpful, especially during "struggle time" where they could work through challenging problems before receiving guidance. They appreciated it when teachers made connections to real-world uses of math like jobs, money, and building.

Despite these positive aspects of math instruction, students also identified several challenges in their math learning. Division, especially with large numbers, was the most frequently mentioned when asked about their least favorite topic, as well as fractions, especially when using number lines. Many students expressed frustration with tools like rulers and number lines, saying they were hard to use accurately. While students seem to understand why teachers want them to do well in math, they often felt rushed or pressured for time when learning new math skills, and ACAP testing created additional stress across all grade levels.

Students reported different experiences with how their teachers talked to them about their math progress. Most students said their teachers do give them feedback about how they are doing in math by talking with them, showing progress charts from i-Ready, reviewing test results together, and having one-on-one or small group conversations. However, the frequency with which teachers talked to students about their progress varied with some teachers talking to students every day, while others only talked to them once or twice a week or when students did poorly on tests. Many students shared that they liked it when teachers pulled them aside privately, showed them what they needed to work on, encouraged them, and gave rewards for doing well. Nonetheless, other students reported having their teachers talk about their grades in front of the whole class, not giving all students the same chances to get help, and getting frustrated when students still had trouble after being taught something once. These students shared that it made them scared to ask questions because they are worried about being embarrassed or making their teacher upset. This shows that the quality of feedback students receive is dependent on their individual teacher rather than consistent practices across all schools.

Most students shared that their parents do talk to them about their math performance, although there are variations in terms of frequency and the nature of the conversations. Many students said their parents talked to them about math mainly when report cards were sent home, when they were struggling with homework, or when they received poor grades on their math tests. Students frequently mentioned getting help from extended family members including older siblings, grandparents, aunts, uncles, and cousins when they needed support with math problems. However, across all focus groups, students mentioned that parents and family members explain math problems differently than their teachers, with students describing their family members' methods as being easier or different from what they learn in school. Many students noted that their parents learned math using older methods and struggle to understand current instructional approaches, sometimes leading parents to give up on helping with homework or students having to tell family members that the coach taught them differently. While most family members were willing to help, the disconnect between home and school math problem solving methods created confusion for students who needed to use strategies taught at school for homework assignments. Some students also mentioned that when they struggled in math class, they were afraid to ask teachers for help and instead relied on older siblings who might be more familiar with current math methods.

Students consistently reported that math becomes more challenging each year, with most describing their current learning as different or harder than the previous year. The typical progression moved from addition and subtraction in earlier grades to multiplication and division in later grades, with fractions becoming more prominent in upper elementary. Students noted that while they worked with similar operations, the numbers became larger, and problems required more steps to solve. Many mentioned that division with large numbers was particularly new and challenging, and that math now involved "more numbers, more problems, more steps" than before. Students also observed increased time pressure and greater focus on problem-solving speed. However, they noted some continuity, mentioning they could still use strategies from previous years and that some approaches remained the same even as content became more complex.

Students also demonstrated a strong understanding of why math is important, consistently connecting it to future goals and real-world applications. The most common reasons included needing math for their future careers in medicine, education, and construction, as well as for handling money, paying bills, and making purchases. Students also recognized that math is essential for everyday tasks like cooking and measuring, and for academic success including passing tests and going to college. However, some students revealed their motivation was primarily extrinsic, expressing that they learned math because teachers required it rather than because they are interested in it.

Overall, student attitudes toward math as their favorite subject varied significantly across focus groups, ranging from all students in one group loving math to no students in another group. Most importantly, math favorability varied dramatically by individual classroom rather than by school or grade level, suggesting that individual teachers have substantial impact on student engagement and attitudes toward mathematics. Some classrooms showed high engagement and positive learning environments, while others revealed concerning patterns of student anxiety and disengagement. This variation suggests that professional development and instructional consistency may be important factors in ANA implementation success.

Appendix D: Summary of ANA In-Person Site Visits

HumRRO and Mathematica staff traveled to Alabama in October and November 2024 to conduct site visits at a sample of full- and limited-support (FS/LS) schools to observe their implementation of the Alabama Numeracy Act (ANA). The team visited six schools over the course of 3 weeks, strategically selecting schools from different regions of Alabama (north, central, and south). We visited one urban and one rural school each week to ensure a diverse representation of educational contexts. Each site visit included classroom observations, coaching session observations, administrative meetings, professional learning community (PLC) and/or data meetings, and focus groups with students and parents.

The team observed a total of 33 Tier 1 instructions, 18 Tier 2 instructions, and 16 Tier 3 instructions across the six schools. During Tier 1 instruction, teachers typically followed a consistent pattern of activities, which usually started with number talks, a math activity with the entire class where students would raise their hands and provide their solutions or thinking through oral and/or written communication. Teachers then introduced and provided instruction on the day's main lesson and engaged students through whole group activities or rotating math stations. Most students in the observed classrooms had been identified with a math deficiency, so Tier 2 instruction was often integrated with Tier 1 instruction, making it challenging to distinguish between the two levels of support. During these periods, teachers typically provided additional scaffolding or targeted instruction to specific groups of students on the current topic while other students engaged in independent work or continued with station rotations.

Tier 3 instruction represented the most intensive level of intervention and focused primarily on remediation strategies. During these sessions, teachers worked with a subset of their students at the teacher table or in a separate classroom and engaged them in targeted math lessons that were often not directly related to the day's main topic. These small-group interventions allowed teachers to address specific skill gaps through personalized instruction and provide immediate feedback, helping struggling students build confidence with foundational mathematical concepts.

The team observed seven coaching sessions across the six schools. Several coaching sessions occurred directly in the classroom during regular instruction through co-teaching, allowing math coaches to provide real-time support and feedback to teachers as they implemented new strategies. Teachers and math coaches met one-on-one during a separate coaching session later in the day to debrief, which provided opportunities to discuss instructional practices, reflect on student progress, and collaborate on planning future lessons. The team also observed two meetings between the Office of Mathematics Improvement (OMI) staff and the math coach. These sessions focused on helping math coaches learn new math strategies to use with teachers and discussing ways to overcome coaching challenges.

The team observed six professional learning community (PLC)/data meetings across the schools. Four meetings focused on systematic review of student assessment results, discussion of individual student progress, and data-driven instructional decisions. One meeting focused on professional learning around a specific topic, while another meeting combined content deepening through article review using the Depth of Instruction (DOI) rubric. These meetings typically involved grade-level teachers, math coaches, and school administrators collaborating to analyze assessment data, identifying students needing additional support or intervention, and adjusting instructional approaches based on evidence of student learning. The data-driven decision-making processes that were observed demonstrated how schools use assessment information to inform their implementation of tiered instruction and support systems.

Finally, the team observed meetings between regional coordinators, math coaches, and school administrators. During these meetings, coaches discussed upcoming professional development events, identified resource needs, and addressed strengths and areas for ANA implementation improvement. In multiple instances, these conversations included discussions of challenges surrounding *Monday.com*, the platform that schools use to track implementation and communication. They also explored ways to strengthen parent engagement and support families in helping their children with math at home.

Appendix E: Student Attendance by School Designation

Table E-1. Student Attendance by School Designation SY2023–24 and SY2024–25

Designation	N SY2023–24	% SY2023–24	N SY2024–25	% SY2024–25	Change N	Change %
FS	11,727	3.42%	19,106	5.54%	7,379	2.13%
LS	25,645	7.47%	55,679	16.16%	30,034	8.69%
ND	305,996	89.12%	269,783	78.30%	-36,213	-10.82%

Table E-2. EL Attendance by School Designation SY2023–24 and SY2024–25

Designation	% EL SY2023–24	% EL SY2024–25	Change % EL
FS	10.59%	10.28%	-0.31%
LS	13.16%	14.60%	1.44%
ND	10.70%	10.68%	-0.01%

Table E-3. SWD Attendance by School Designation SY2023–24 and SY2024–25

Designation	% SWD SY2023–24	% SWD SY2024–25	Change % SWD
FS	12.60%	13.69%	1.08%
LS	13.16%	15.79%	2.63%
ND	15.52%	16.23%	0.71%

Table E.4. Economically Disadvantaged Student Attendance by School Designation SY2023–24 and SY2024–25

Designation	% FRL SY2023–24	% FRL SY2024–25	Change % FRL
FS	91.46%	85.97%	-5.49%
LS	87.54%	82.87%	-4.67%
ND	65.54%	56.87%	-8.67%

Appendix F: Student Math Proficiency – ACAP, i-Ready, and Teacher Certification

Table F-1. Student SY2023–24 and SY2024–25 ACAP Performance

Designation	Grade	Percent Proficient SY2023–24	Percent Proficient SY2024–25	Change Percent Proficient	Mean ACAP Scale Score SY2023–24	Mean ACAP Scale Score SY2024–25	Change Mean ACAP Scale Score
FS	2	10.94	14.91	3.97	461.96	464.07	2.11
LS	2	15.80	23.21	7.41	471.57	484.24	12.67
ND	2	44.79	50.37	5.58	517.01	522.06	5.06
FS	3	10.95	11.63	0.68	468.77	467.37	*-1.40*
LS	3	14.13	22.43	8.30	476.66	491.05	14.39
ND	3	43.99	50.56	6.57	523.40	530.24	6.84
FS	4	5.06	8.99	3.93	464.81	468.03	3.21
LS	4	9.20	18.47	9.27	473.47	491.59	18.11
ND	4	40.52	46.75	6.23	525.57	531.50	5.93
FS	5	6.76	6.99	0.23	464.44	463.10	*-1.34*
LS	5	10.85	16.26	5.41	476.21	488.44	12.23
ND	5	38.90	44.64	5.75	523.46	529.28	5.82

Notes*:* The numbers of SY2024–25 FS and LS schools in this table are based on data files provided by the Office of Mathematics Improvement (OMI) in September 2025. The italicized mean ACAP scale scores for FS at grades 3 and 5 highlight small decreases in performance, with an overall pattern of increased performance.

Table F-2. Student SY2023–24 and SY2024–25 i-Ready Math Mean Scores

Designation	Grade	Benchmark	Mean Scale Score SY2023–24	Mean Scale Score SY2024–25	Change Mean Scale Score
FS	0	BOY	326.58	336.76	10.17
FS	0	MOY	344.24	328.28	-15.96
FS	0	EOY	357.94	335.55	-22.40
LS	0	BOY	327.30	359.45	32.15
LS	0	MOY	345.48	361.56	16.08
LS	0	EOY	359.32	371.33	12.01
ND	0	BOY	334.43	355.05	20.62
ND	0	MOY	353.98	347.74	-6.25
ND	0	EOY	369.61	355.70	-13.91
FS	1	BOY	352.91	364.15	11.24
FS	1	MOY	368.00	358.83	-9.16
FS	1	EOY	379.97	368.59	-11.37
LS	1	BOY	356.38	381.30	24.92
LS	1	MOY	372.73	385.95	13.22
LS	1	EOY	383.62	402.02	18.40
ND	1	BOY	367.69	380.10	12.41
ND	1	MOY	385.73	375.57	-10.17
ND	1	EOY	399.65	387.39	-12.26
FS	2	BOY	375.66	384.68	9.02
FS	2	MOY	387.80	383.90	-3.90
FS	2	EOY	397.09	396.27	-0.82
LS	2	BOY	380.28	407.31	27.03

Designation	Grade	Benchmark	Mean Scale Score SY2023–24	Mean Scale Score SY2024–25	Change Mean Scale Score
LS	2	MOY	394.07	408.66	14.59
LS	2	EOY	403.73	425.87	22.14
ND	2	BOY	394.48	397.79	3.31
ND	2	MOY	410.17	398.49	-11.68
ND	2	EOY	422.95	412.54	-10.41
FS	3	BOY	397.86	406.40	8.55
FS	3	MOY	409.98	406.88	-3.10
FS	3	EOY	419.42	422.29	2.87
LS	3	BOY	402.37	421.77	19.40
LS	3	MOY	416.18	429.48	13.30
LS	3	EOY	426.92	450.37	23.45
ND	3	BOY	419.89	417.97	-1.92
ND	3	MOY	434.31	419.95	-14.36
ND	3	EOY	447.04	436.51	-10.53

Table F-3. Student SY2023–24 and SY2024–25 Teacher Certification Data

Designation	Certification Class	N SY2023–24	% SY2023–24	N SY2024–25	% SY2024–25	Change N	Change %
FS	Class AA	24	4.64	38	5.94	14	1.3
LS	Class AA	61	6.35	106	4.3	45	-2.05
ND	Class AA	536	4.04	470	4.05	-66	0.01
FS	Class A	132	25.53	158	24.69	26	-0.84
LS	Class A	292	30.42	751	30.49	459	0.07
ND	Class A	5535	41.73	5000	43.03	-535	1.3
FS	Class B	163	31.53	183	28.59	20	-2.94
LS	Class B	368	38.33	1019	41.37	651	3.04
ND	Class B	6324	47.68	5564	47.89	-760	0.21
FS	Other	144	27.85	224	35	80	7.15
LS	Other	199	20.73	493	20.02	294	-0.71
ND	Other	661	4.98	419	3.61	-242	-1.37
FS	Missing	54	10.44	37	5.78	-17	-4.66
LS	Missing	40	4.17	94	3.82	54	-0.35
ND	Missing	208	1.57	166	1.43	-42	-0.14

Appendix G: Effectiveness of Math Coach on Student Math Achievement

HumRRO conducted a quasi-experimental design study to examine the effects ANA had on FS/LS schools with a coach compared to non-designated schools without a coach.

Data

HumRRO received a variety of data from ALSDE and OMI that were cleaned and combined for this analysis. From ALSDE, we received SY2023–24 and SY2024–25 ACAP summative test scores and student demographic information. From OMI, we received a list of schools that OMI designated as FS and LS for SY2023–24 and SY2024–25, along with information about those schools' sources of math coach funding and hiring status. Last we used the publicly available Education Demographic and Geographic Estimates (EDGE) database from the National Center for Education Statistics (NCES) to collect information on the urbanicity of the schools. Table G-1 summarizes the variables that we used from these various data sources for the comparison study.

Table G-1. Names, Sources, and Explanations of Comparison Study Variables

Final Variables	Source Organization	Description
SY2024–25 Grade 3–5 ACAP Math Average Z-score	ALSDE	For each student in grades 3-5 our SY2024-25 data, we subtracted the student's scale score from the scale score mean for their grade, then divided the difference by the standard deviation of the scale scores for their grade. We took the average of these z-scores for each school.
SY2023–24 Grade 3–5 ACAP Math Average Z-score	ALSDE	For each student in grades 3-5 our SY2023-24 data, we subtracted the student's scale score from the scale score mean for their grade, then divided the difference by the standard deviation of the scale scores for their grade. We took the average of these z-scores for each school.
Treatment Effect	OMI	A binary variable (0 or 1). 1 = school was designated as FS or LS in SY2024-25 and hired a math coach for the full year. 0 = school did not have a math coach for any portion of SY2024-25.
Site Type	OMI	School categorizations by type. Values included: Public Charter School – Converted, Public Charter School Startup, Public Magnet School, Public Regular School, Public Special Education School, and Public Virtual School. When used in analyses, this variable was converted into binary dummy variables for each type, with "Public Regular School" as the reference category.
Urbanicity	NCES	School categorizations by urbanicity. Values ranged from City, Midsize to Rural, Remote. When used in analyses, this variable was converted into a binary dummy variable where 1 = all City or Suburban values and 0 = all Town or Rural values.
FRL%	ALSDE	The percentage of grades 3–5 students at each school eligible for free or reduced lunch in SY2024–25.
ELL%	ALSDE	The percentage of grades 3–5 students at each school who were identified as an English Language Learner in SY2024–25.
IEP%	ALSDE	The percentage of grades 3–5 students at each school who had an active IEP in SY2024–25.
White%	ALSDE	The percentage of white grades 3–5 students at each school in SY2024–25.

Note. Italicized variables were used in our matching analysis. Bolded variables were used in our regression analysis. Variables that are bold and italicized were used in both the matching and regression analyses.

Defining ANA "Treatment"

Under the intended ANA implementation, schools were ranked statewide by the percentage of students in grades 3–5 that received a proficient score or higher on the SY2023–24 ACAP Math summative assessment. Schools in the bottom 25% of this ranking, which corresponded to schools that had at or below 20% of their grade 3-5 students scoring proficient or higher, were designated as either FS or LS and provided with a state-funded math coach. However, in a broader effort to improve statewide math achievement, the state accelerated its coach assignment process by expanding coach assignment to higher-ranked schools (i.e., above the 25th percentile). This effectively creates two treatment groups: "whole" treatment (coached) schools, which are at or below the 25th percentile and received a coach; and "partial" treatment (coached) schools, which are above the 25th percentile threshold, but did receive a coach in SY2024–25. We focused on the "whole" treatment schools and ND schools with no coach.

Sample

We worked with ALSDE and OMI to identify 858 active schools in SY2024–25 that served at least one grade between kindergarten and fifth grade. To be eligible for inclusion in the comparison study, these schools had to meet the following criteria:

- Must not have a site type of "Public Special Education School".
- Must not be an FS or LS Feeder School.
- Must have ACAP summative math data for both SY2023–24 and SY2024–25.
- Must have an overall percent proficient on ACAP Math across grades 3, 4, and 5 must be in the bottom 35th percentile.
- Must not have hired any math coach in SY2024–25 if they were not a school designated as FS or LS.
- If school is an FS or LS designated school, the math coach must have been hired at the start of the SY2024–25 school year and continued through the entire school year.

Using these criteria, we identified 267 of 858 (31%) schools that were eligible to be included in the comparison study. We defined our eligible treatment schools (*N* = 188) as schools that were designated as FS or LS and that hired a coach for the full SY2024–25 school year. Our eligible comparison schools (*N* = 79) were schools that did not have a coach for any of the SY2024–25 school year.

Matching

We found evidence that the treatment and comparison groups were not equivalent (Table G-2).[15] We used one-to-one matching to minimize the differences between the two groups at

[15] Baseline equivalence assesses the degree to which that the treatment and comparison groups start off in the same place on (a) metrics that will be used to evaluate the effectiveness of the treatment, and (a) other relevant characteristics that could affect the outcome other than the treatment itself. For example, if we found that the treatment group had higher ACAP math scores in SY2024-25 than the comparison group, but we also saw that in SY2023-24 the comparison group had lower ACAP math scores than the treatment group, then the estimated effect of the treatment would be larger than it would be if we had not considered SY2023-24 at all. (What Works Clearinghouse, 2022).

baseline. More specifically, for this study, we used one-to-one optimal matching based on the Mahalanobis distance metric (Hansen & Klopfer, 2006). However, after using this method, we still saw Hedge's *g* values greater than 0.25 on our baseline variables. To resolve this, we implemented a pruning strategy where we iteratively dropped one school at a time based, first, on which group was larger (treatment or control) and then, which school was identified as contributing the most to large absolute standardized mean differences across all variables. We continued to prune in this manner until the absolute value of all Hedge's *g* statistics across variables were below 0.25. After implementing our matching technique, our final sample for the comparison study were 40 matched pairs, totaling 80 schools (40 treatment schools, 40 comparison schools[16]) (Table G-3). Most matched treatment schools (96%) were LS schools as opposed to FS schools, which is an expected limitation of the QED design in this context given that the treatment was assigned based on a school's ACAP Math percent proficient in the prior school year.

Table G-2. Baseline Equivalence for ACAP Math Scores and School Characteristics Before Matching

Variables	Treatment			Comparison			Mean Difference	Effect Size (Hedges' g)
	N	Mean	SD	N	Mean	SD		
SY2022–23 Grade 3–5 ACAP Math Average Z-score	79	-0.23	0.19	188	-0.63	0.23	-0.40	-1.82
White%	79	0.55	0.29	188	0.16	0.23	-0.39	-1.57
FRL%	79	0.66	0.15	188	0.84	0.1	0.18	1.53
ELL%	79	0.09	0.11	188	0.13	0.15	0.04	0.24
IEP%	79	0.19	0.09	188	0.17	0.06	-0.02	-0.31
Public Regular	73	0.92	0.27	174	0.93	0.26	0.01	0.01
Public Charter	1	0.01	0.11	9	0.05	0.21	0.04	0.15
Public Virtual	5	0.06	0.25	5	0.03	0.16	-0.03	-0.16
Rural	56	0.71	0.46	80	0.43	0.50	-0.28	-0.59
City or Suburban	23	0.29	0.46	108	0.57	0.50	0.28	0.58

[16] There were 8 designated schools that were not assigned a coach for the full SY2023-24. To better balance the limited eligible comparison schools, we allowed these schools to be matched per conversations with OMI.

Table G-3. Baseline Equivalence for ACAP Math Scores and School Characteristics After Matching

Variables	Treatment			Comparison			Mean Difference	Effect Size (Hedges' g)
	N	Mean	SD	N	Mean	SD		
SY2022–23 Grade 3–5 ACAP Math Average Z-score	40	-0.33	0.21	40	-0.38	0.14	-0.05	-0.23
White%	40	0.42	0.27	40	0.42	0.28	0	0
FRL%	40	0.73	0.14	40	0.74	0.11	0.01	0.03
ELL%	40	0.11	0.14	40	0.11	0.14	0	-0.03
IEP%	40	0.19	0.11	40	0.19	0.06	0	-0.03
Public Regular	36	0.90	0.30	37	0.92	0.27	0.02	0.09
Public Charter	1	0.03	0.16	1	0.03	0.16	0	N/A
Public Virtual	3	0.07	0.27	2	0.05	0.22	-0.02	-0.07
Rural	25	0.62	0.49	25	0.62	0.49	0	0
City or Suburban	15	0.38	0.49	15	0.38	0.49	0	0

Results

We used an Ordinary Least Squares (OLS) regression model to estimate the impact of the treatment (i.e., having an FS or LS designation and having a math coach for the entire SY2024–25 school year) on the SY2024–25 ACAP math average z-score for grades 3–5. This model included the SY2023–24 ACAP math average z-score for grades 3–5 as a covariate, along with other relevant school characteristic variables where there were still slight baseline differences between our treatment and comparison groups. We conducted the following linear regression model:

$$Outcome\ ACAP\ Math_i = \beta_0 + \beta_1(Treatment) + \beta_2(Baseline\ ACAP\ Math) + \beta_3(White\%) + \beta_4(FRL\%) + \beta_4(ELL\%) + \beta_5(IEP\%) + \beta_6(Public\_Regular) + \beta_8(Rural) + e_i$$

As shown in Table G-4, after accounting for the variance of all other variables included in the model, the treatment effect of being an FS or LS designated school with a coach on SY2023–24 grades 3–5 math achievement was negligible (*b* = -0.0579, p = 0.1866).

Table G-4. Comparison Study Regression Results

Variable	Estimate	S.E.	*p*-value
Treatment Effect	-0.0579	0.0434	0.1866
SY2022–23 Grade 3–5 ACAP Math Average Z-score	0.6915	0.1670	< 0.001
White%	0.0048	0.0013	< 0.001
FRL%	0.0019	0.0024	0.4423
ELL%	0.0008	0.0016	0.6336
IEP%	-0.0038	0.0033	0.2497
Public Regular	0.1278	0.0964	0.1890
Rural	-0.1828	0.0591	0.0029

Note. The outcome variable for this analysis was SY2024-25 G3-5 ACAP Math Average Z-score.

Year 2 Results (SY2023–24)

These results are consistent with the Year 2 analyses that examined the extent to which full-support (FS) and limited-support (LS) schools that were assigned a math coach yield better performance than non-designated schools without coaching support between SY2023–23 and SY2023–24. Using a quasi-experimental design, similar to the approach used in Year 3, we matched treatment schools (FS/LS schools with a coach) to comparison schools (non-designated schools with no coach) based on prior achievement and school demographics. While matching ensures a fair comparison by establishing baseline equivalence, it comes at a cost; the eligible sample of 155 schools was reduced to 44 schools (22 treatment, 22 comparison), which limits the ability to detect small effects even if they exist. Given the small matched sample, we used fewer covariates in our impact model compared to our Year 3 analysis (see Table G-5). With those caveats in mind, Year 2 designated schools showed no meaningful improvement over non-designated schools, consistent with the Year 3 findings reported here.

Table G-5. Comparison Study Regression Results (SY2023–24)

Variable	Estimate	S.E.	*p*-value
Treatment Effect	0.0297	0.0521	0.5727
SY2022–23 Grade 3–5 ACAP Math Average Z-score	0.9615	0.1180	0.0000
FRL%	0.0578	0.4198	0.8914
ELL%	-0.1432	0.1528	0.3565
IEP%	-0.1660	0.3212	0.6093
White%	0.4609	0.1949	0.0249

Note. The outcome variable for this analysis was SY2024–25 grade 3–5 ACAP math average Z-score.

Appendix H: Use of EMTF-Approved Assessments

Table H-1. Student Use of Formative Benchmark Assessments in SY2024–25 by Grade

Grade	Total N	N Took Any Formative Benchmark Assessment	% Took Any Formative Benchmark Assessment	N Took EMTF-Approved Formative Benchmark Assessment	% Took EMTF-Approved Formative Benchmark Assessment
K	57,634	54,579	94.70	50,212	87.12
1	58,641	57,208	97.56	51,352	87.57
2	58,314	57,038	97.81	51,197	87.80
3	58,780	57,468	97.77	51,714	87.98
4	55,881	54,635	97.77	48,895	87.50
5	55,318	54,102	97.80	48,417	87.52
Total	344,568	335,030	97.23	301,787	87.58

Table H-2. School Use of Formative Benchmark Assessments for any student in SY2024–25, by Designation

Designation	Total N	N Had Any K-5 Student Take Formative Benchmark Assessments	% Had Any K-5 Student Take Formative Benchmark Assessments	N Had Any K-5 Student Take EMTF-Approved Formative Benchmark Assessments	% Had Any K-5 Student Take EMTF-Approved Formative Benchmark Assessments
FS	49	48	97.96	48	97.96
LS	161	161	100.00	160	99.38
ND	648	643	99.23	636	98.15
Total	858	852	99.30	844	98.37

Table H-3. School Use of Formative Benchmark Assessments for 50% of students in SY2024–25, by Designation

Designation	Total N	N Had At Least 50% of K-5 Students Take Formative Benchmark Assessments	% Had At Least 50% of K-5 Students Take Formative Benchmark Assessments	N Had At Least 50% of K-5 Students Take EMTF-Approved Formative Benchmark Assessments	% Had At Least 50% of K-5 Students Take EMTF-Approved Formative Benchmark Assessments
FS	49	47	95.92	47	95.92
LS	161	161	100.00	149	92.55
ND	648	636	98.15	557	85.96
Total	858	844	98.37	753	87.76

Table H-4. Student Use of Early Numeracy Screener Assessments in SY2024–25 by Grade

Grade	Total N	N Took i-Ready BOY Formative Benchmark Assessment	% Took i-Ready BOY Formative Benchmark Assessment	N with Early Numeracy Deficiency Flag	% with Early Numeracy Deficiency Flag
K	57,634	43,689	75.80	0	0.00
1	58,641	45,729	77.98	5,462	9.31
2	58,314	45,500	78.03	6,806	11.67
Total	174,589	134,918	77.28	12,268	7.03

Appendix I: Use of EMTF-Approved Core Curricula and Materials

Table I-1. FS Principals' Use of EMTF-Approved Core Curricula and Materials

FS Principal Key ANA Tasks	% Not Implementing
Using approved math curricula for core instruction.	3.0%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	0.0%

Source: SY2024–25 ANA Annual Survey.

Table I-2. LS Principals' Use of EMTF-Approved Core Curricula and Materials

LS Principal Key ANA Tasks	% Not Implementing
Using approved math curricula for core instruction.	0.0%
Using approved math intervention programs or curricula for Tier 2 and Tier 3 interventions.	3.8%

Source: SY2024–25 ANA Annual Survey.

Table I-3. Math Teachers' Use of EMTF-Approved Core Curricula and Materials

Math Teacher Key ANA Tasks	Not Implementing
Providing an average of 60 min per day of Tier 1 math instruction.	1.2%
Using only Elementary Math Task Force-approved mathematics curricula and quality print and online resources.	0.2%

Source: SY2024–25 ANA Annual Survey.

Appendix J: Implementation of Required Instructional Time

Table J-1. Math Teachers' Use of EMTF-Approved Core Curricula and Materials

Math Teacher Key ANA Tasks	Not Implementing
Providing an average of 60 min per day of Tier 1 math instruction.	1.2%

Source: SY2024–25 ANA Annual Survey.

Appendix K: Implementation of Targeted Intervention

Table K-1. Students with BOY Early Numeracy Deficiency Flag Who Received Tiered Services by School Designation

`	School Designation	Total Students with END Flag	Tier 2 N*	Tier 2 %*	Tier 3 N	Tier 3 %	Tier 2 or 3 N	Tier 2 or 3 %	No Record Tiered Services N	No Record Tiered Services %
1	FS	414	5	1.2	147	35.5	152	36.7	262	63.3
	LS	1294	38	2.9	216	16.7	254	19.6	1040	80.4
	ND	3754	51	1.4	826	22.0	877	23.4	2877	76.6
	Grade Subtotal	**5462**	**94**	**1.7**	**1189**	**21.8**	**1283**	**23.5**	**4179**	**76.5**
2	FS	401	4	1.0	183	45.6	187	46.6	214	53.4
	LS	1588	23	1.4	394	24.8	417	26.3	1171	73.7
	ND	4817	57	1.2	1066	22.1	1123	23.3	3694	76.7
	Grade Subtotal	**6806**	**84**	**1.2**	**1643**	**24.1**	**1727**	**25.4**	**5079**	**74.6**
Total		**12268**	**178**	**1.5**	**2832**	**23.1**	**3010**	**24.5**	**9258**	**75.5**

Note. *Schools were not required to report student participation in Tier 2 services in SY2024–25.

Table K-2. Students without BOY Early Numeracy Deficiency Flag Who Received Tiered Services by School Designation

Grade	School Designation	Total Students with END Flag	Tier 2 N*	Tier 2 %*	Tier 3 N	Tier 3 %	Tier 2 or 3 N	Tier 2 or 3 %	No Record Tiered Services N	No Record Tiered Services %
1	FS	2844	5	0.2	266	9.4	271	9.5	2573	90.5
	LS	8359	90	1.1	418	5.0	508	6.1	7851	93.9
	ND	41976	178	0.4	1491	3.6	1669	4	40307	96
	Grade Subtotal	**53179**	**273**	**0.5**	**2175**	**4.1**	**2448**	**4.6**	**50731**	**95.4**
2	FS	2798	8	0.3	397	14.2	405	14.5	2393	85.5
	LS	7986	96	1.2	579	7.3	675	8.5	7311	91.5
	ND	40724	208	0.5	2047	5.0	2255	5.5	38469	94.5
	Grade Subtotal	**51508**	**312**	**0.6**	**3023**	**5.9**	**3335**	**6.5**	**48173**	**93.5**
Total		**104687**	**585**	**0.6**	**5198**	**5.0**	**5783**	**5.5**	**98904**	**94.5**

Note. *Schools were not required to report student participation in Tier 2 services in SY2024–25.

Appendix L: Implementation of Core MTSS Components

Table L.1. Percentage of Math Coaches Implementing Core MTSS Components in FS and LS Schools in SY2024–25

Survey Items	MTSS Component	Math Coach %
Assist teachers in administering early numeracy screeners or diagnostic assessments to grades K–2 students[a]	Universal Screening	93%
Assist teachers with administering fractional reasoning screeners or diagnostic assessments to grades 4 – 5 students[ab]	Universal Screening	33%
Support instructional improvements with an emphasis on Tier 1 math instruction at least weekly[c]	Tiered Instruction & Intervention	97%
Model evidence-based math instruction and intervention strategies at least weekly[c]	Tiered Instruction & Intervention	94%
Assist teachers in using data to differentiate math instruction and identify students with dyscalculia and other exceptionalities at least weekly[c]	Data-Based Decision Making	94%
Collaborate with grade-level teams to develop rigorous tasks, lessons, and assessments aligned to math content standards, analyze student work, and provide real-time feedback and make next-step instructional decisions based on student evidence at least weekly[c]	Data-Based Decision Making	86%
Assist math teachers with using formative assessments and analyzing student work to identify students with misconceptions students exhibiting dyscalculia, and student needing acceleration at least weekly[c]	Progress Monitoring	74%
Facilitate us of assessment data at all levels of math instruction to assist in decision making that moves students to higher levels of math performance at least weekly[c]	Progress Monitoring	72%
Member of schools PST team[a]	Supporting School Infrastructure	88%

Source: SY2024–25 ANA Annual Survey.

Note. MTSS components from the Multi-Tiered System of Supports (MTSS) Fidelity of Implementation Rubric, which describes five essential components for implementing a successful MTSS process: universal screening, tiered instruction and intervention, data-based decision making, progress monitoring, and supporting school infrastructure (American Institutes for Research, 2024).

[a] indicates that the question used a yes/no response.

[b] State-approved fractional reasoning screeners/diagnostic assessments were not in place at the time of the survey, likely contributing to the lower percentage of coaches that reported engaging in this behavior.

[c] indicates that the question used a frequency scale (not implementing, less than monthly, monthly, weekly, daily).

FS = full-support school; LS = limited-support school.

PST = Problem Solving Team.

Table L.2. Percentage of Teachers Implementing Core MTSS Components at Least Weekly in FS and LS Schools in SY2024–25

Survey Items	MTSS Component	Math Teachers %
Providing an average of 60 minutes per day of Tier 1 math instruction[a]	Universal Screening	98%
Planning and developing units and lessons based on grade-level math content standards[a]	Universal Screening	98%
Implementing evidence-based teaching practices[a]	Universal Screening	99%
At least somewhat comfortable providing Tier 2 or Tier 3 math instruction[b]	Universal Screening	96%
At least somewhat confident that students identified for Tier 2 or Tier 3 math support received the appropriate tiered intervention support[c]	Universal Screening	92%
Using evidence of student understanding to support planning next instructional steps[a]	Data-Based Decision Making	99%
Providing descriptive and timely feedback to students that includes strengths, deficiencies, and next steps for progress toward learning targets[a]	Progress Monitoring	97%
Using only Elementary Mathematics Task Force-approved math curricula and quality print and online resources[s]	Supporting School Infrastructure	97%
Providing reports to parents/legal guardians that detail the strengths, deficiencies, and progress of students who received math intervention during the school year[a]	Supporting School Infrastructure	97%
Member of school's PST team[a]	Supporting School Infrastructure	39%
Used PST process to support a student in math[a]	Supporting School Infrastructure	60%

Source: SY2024–25 ANA Annual Survey.

Note. MTSS components from the Multi-Tiered System of Supports (MTSS) Fidelity of Implementation Rubric, which describes five essential components for implementing a successful MTSS process: universal screening, tiered instruction and intervention, data-based decision making, progress monitoring, and supporting school infrastructure (American Institutes for Research, 2024). No teacher survey item aligned to universal screening so this component is not shown in the table.

[a] indicates that the question used a yes/no response.

[b] State-approved fractional reasoning screeners/diagnostic assessments were not in place at the time of the survey, likely contributing to the lower percentage of coaches that reported engaging in this behavior.

[c] indicates that the question used a frequency scale (not implementing, less than monthly, monthly, weekly, daily).

FS = full-support school; LS = limited-support school.

PST = Problem Solving Team.

Table L.3. SY2024–25 Math ACAP Performance Levels by Tiered Intervention

Group	% Level 1	% Level 2	% Level 3	% Level 4
K–5 students receiving Tier 3 Intervention	53%	40%	6%	<1%
K–5 Students not receiving Tier 3 Intervention	17%	36%	32%	15%

Source: SY2024–25 PowerSchool Unified Insights; Alabama Department of Education records.

Note. Comparison of ACAP math performance levels for students in schools with at least one record of a Tier 3 intervention in SY2024–25.

Appendix M: Teacher Math Knowledge and Pedagogical Skills

Mathematics for Teaching Tool

The Mathematics for Teaching Tool (MTT) uses a validated measure called the Mathematical Knowledge for Teaching (MKT) assessment (Ball et al., 2008). The MKT is designed to capture teachers' math knowledge for teaching, which is knowledge that is specific and useful to teaching students math and not solely common content knowledge (Hill et al., 2004). The tool has been widely used in evaluating learning in professional development programs and provides insights into the relationship between teachers' knowledge and practice. Teachers respond to multiple choice items that ask them how to solve math problems, how to understand student responses to problems, how specific methods apply to a range of computation problems that students might encounter, and why specific methods are best suited to solve specific problems.

MTT Administration

We fielded the Mathematics for Teaching Tool (MTT) during SY2024–2025 from November 7 to December 22, 2024, and again during SY2025–2026 from October 1 to October 31, 2025. Because the MTT is intended to measure changes over time, at least two years of data are needed for comparison. This study includes data from fall SY2025–26 as a comparison point for measuring changes that may have occurred during SY2024–25. In each year, a link to participate in the MTT was sent to all K-5 elementary mathematics teachers in FS/LS schools using email addresses provided by OMI. Teachers used the link to access the survey through a secure platform called QuestionPro at their convenience; all responses were collected and submitted electronically. The survey took between 15-30 minutes to complete. Less than quarter of teachers participated in each year (792 in 2024–2025, 22% of teachers; 1,024 in 2025–2026, 31% of teachers). The survey is designed to capture change over time; a small number of teachers (207) participated in the MTT in both years when looking across all responses.

Analysis

For each year of data, we calculated the average percent of items answered correctly across participating teachers. Because the measure is designed to capture change, we do not report average percent of items correct, as this is not the intent of the measure and could lead to misinterpretations about teachers' ability. We limited the sample to those who responded to at least 85% of survey items. This resulted in a sample of 409 teachers in SY2024–25 and 435 teachers in 2025-2026, with 76 teachers completing 85% of items in both years. We compared scores in 2024 and 2025 and found no difference in average score on the measure between years for all participating teachers or only those who completed the measure in both years (ps > 0.24, not significant). In addition, we conducted follow-up exploratory analyses on the relationship between teachers' MTT performance and student math performance. No significant relationship was found between Fall 2024 MTT score and SY2024–25 mathematics ACAP score or between change in MTT score and ACAP score ($ps > 0.4$). The study found a weak relationship between Fall 2025 MTT score and SY2024–25 mathematics ACAP score ($r = 0.04$, $p < 0.05$). However, the size of the relationship is below recommended cutoffs for even a small correlation (less than 0.1, see Cohen 1988) and should be interpreted with caution. Finally, the study also assessed whether MTT performance was related to level of education and approximate years of experience for teachers but did not find consistent relationships.

Table M-1. Principals' Ratings of Extent ANA Has Improved Teachers' Math Knowledge and Pedagogical Skills

Principals	%Not At All	% A Little	% Somewhat	% A Lot
FS Principals	0%	13%	58%	29%
LS Principals	3%	17%	49%	31%

Source: SY2024–25 ANA Annual Survey.

Table M-2. SY2024–25 MTT Participation for Schools in ACAP Math Bottom Quartile Performance

Characteristics	% At Least 1 Teacher Responding	% No Teacher Responding
% Black Students, on Average	71%	60%
% White Students, on Average	11%	21%
% Hispanic Students, on Average	13%	15%
% English Language Learners, on Average	12%	13%
% Students Receiving Special Education Services, on Average	16%	18%
% Students Eligible Free/Reduced-Price Lunch, on Average	87%	82%
Average Daily Attendance (% Days Attended)	93%	94%
Number of Schools	105	106

Source: SY2024–25 MTT data; Alabama Department of Education records.
Note. We examined the comparability of schools in the bottom quartile (25%) of SY2024–25 ACAP math performance in which a teacher did or did not respond to the MTT. The bottom quartile of performance was used as a proxy for FS/LS school designation.

Appendix N: Math Coach and Coaching Effectiveness

HumRRO examined the extent to which the proficiency level of coaches assigned to FS and LS designated schools relates to student math achievement.

Data

HumRRO received a variety of data from ALSDE and OMI that were cleaned and combined for this analysis. From ALSDE, we received SY2023–24 and SY2024–25 ACAP summative assessment scores and student demographic information. We received a list of schools from that they designated as FS and LS for SY2023–24 and SY2024–25, along with information about those schools' sources of math coach funding, hiring status, and proficiency level. We also received the *SY2024-25 End-of-Year Coach Proficiency Level Meeting Expectations*[17] guidance documents to provide context for how the proficiency rating process is implemented.

Table N-1 shows that of all designated schools, including feeder schools, most schools had coaches rated at the Emerging proficiency (n = 121) and Developing (n = 69) levels.

Table N-1. 2-Year Coach Proficiency Level of SY2024–25 All Designated Schools

SY2023-24 Proficiency Level	SY2024-25: Emerging	SY2024-25: Developing	SY2024-25: Accomplishing	SY2024-25: Missing	Total
Emerging	58	64	0	0	122
Developing	0	5	11	0	16
Accomplishing	0	0	0	0	0
Missing	63	0	0	9	72
Total	121	69	11	9	210

Note. Missing coaching data either means that we do not have a record of the school having a coach in a given school year, or that the school did not have any coaches that participated in a Coaching Academy. If a school had multiple coaches, the coach will the highest proficiency level was used for these counts.

Table N-2 shows the coach proficiency levels for the analytic sample, that excludes FS and LS feeder schools, schools with no coach or coach proficiency rating, and schools without two years of ACAP math achievement scores.

Table N-2. Coach Proficiency Level of SY2024–25 FS/LS Designated Schools, with Complete Data

Coach Proficiency Level	N	Percent
Emerging	113	60%
Developing	64	34%
Accomplishing	11	6%
Total	188	100%

Note. There were 22 designated schools that did not have a coach in SY2024-25, did not have ACAP scores, or was a feeder school; thus, they were excluded from this analysis

[17] Document provided by OMI in June 2025.

Since each grade's ACAP math assessment score is not based on a vertical scale, for SY2023–24 and SY2024–25 math achievement, we standardized each student's scale score (z-score), computed a grade-level school average z-score, then computed a school-level average across grades. We dummy coded each school's coach proficiency level using two dummy variables, with Emerging serving as the reference category and Developing and Accomplishing as the comparison groups.

Analysis and Results

To examine the relationship between coach proficiency level and school-level math achievement in FS and LS schools, we conducted a one-way analysis of covariance (ANCOVA) using SY2024–25 school-level average math achievement (z-scores) as the outcome variable. We included prior math achievement (SY2023–24 z-scores) as a covariate and coded coach proficiency level using two dummy variables, with Emerging serving as the reference category and Developing and Accomplishing as the comparison groups. We estimated the model at the school level ($N = 188$) and evaluated statistical significance at the $p < .05$ threshold. While schools with Accomplishing coaches had a slightly higher percentage of proficient students, neither the Developing ($\beta = -0.029$, $SE = 0.024$, $p = .238$) nor Accomplishing ($\beta = 0.028$, $SE = 0.049$, $p = .562$) proficiency levels were significantly associated with student achievement outcomes after accounting for prior performance (see Tables N-3 and N-4, Figure N-1).

Table N-3. SY2024-25 ACAP Percent Proficiency Rates and z-scores by Coach Proficiency Levels

Coach Proficiency Level	N	Pct. Prof. Mean	Pct. Prof SD	z-score Mean	*z-score SD*
Emerging	113	18%	0.08	-0.57	0.24
Developing	64	18%	0.07	-0.55	0.23
Accomplishing	11	21%	0.08	-0.51	0.22

Note. The analytic sample excluded 22 schools that were either FS or LS feeder schools, did not have a coach or coach proficiency rating, or was missing either SY2023-24 or SY2024-25 ACAP scores.

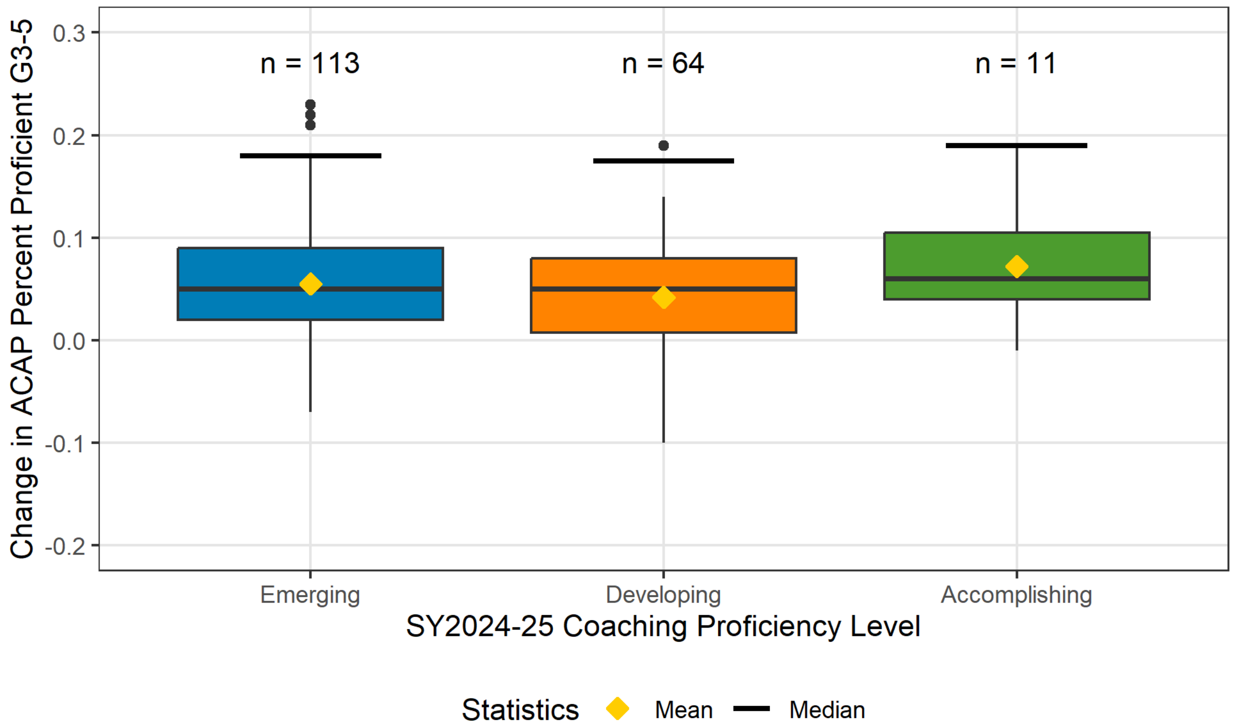
Table N-4. ANCOVA Results: Association Between Coach Proficiency Level and School-Level Math Achievement (SY2024-25)

Variable	Estimate	S.E.	*T*	*p*-value
(Intercept)	-0.064	0.036	-1.80	0.074
SY2022-23 G3-5 ACAP Math Average Z-score	0.779	0.049	15.76	0.000
Developing	-0.029	0.024	-1.18	0.238
Accomplishing	0.028	0.049	0.58	0.562

Note. The outcome variable for this analysis was SY2024-25 G3-5 ACAP Math Average Z-score.

We also examined the relationship between coach proficiency level and change in the percent of students proficient at each school. Figure N-1 shows that coaching proficiency level has no meaningful relationship on change in school's student proficiency rates between SY2023–24 and SY2024–25.

Figure N-1. Change in SY2023–24 and SY2024–25 ACAP Percent Proficiency Rates by Coach Proficiency Levels



Appendix O: ANA Financial Costs

Table O-1. Use of Local Funds to Implement ANA, Reported by FS and LS School Principals

Responses	% Responding FS School Principals	% Responding LS School Principals
No Local Funds Used to Support ANA	83%	90%
Local Funds Used for Manipulatives	3%	7%
Local Funds Used for Training-related Costs	13%	3%

Source: SY2024–25 ANA Annual Survey.

Notes. Percentages may not sum to 100% due to rounding.

Table O-2. Use of Local Funds to Implement ANA, Reported by FS and LS LEA Staff

Responses	% Responding LEA Staff
No Local Funds Used to Support ANA	44%
Local funds Used to Support Summer Math Camps	21%
Local Funds Used for Additional Incentives for Math Coaches	15%
Local Funds Used for Classroom Materials or Professional Development	12%
Local Funds Used for Supplemental Assessments and Interventions	6%
Local Funds Used for Math Tutoring	6%
Local Funds Used for Tier 3 Math Interventionists	3%

Source: SY2024–25 ANA Annual Survey.
Note. Percentages sum to more than 100% because some LEAs reported multiple cost categories.