Teachers’ Perceptions of Coherence in K–12 English Language Arts and Mathematics Instructional Systems

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Teachers receive signals about what they should teach and how they should teach it from many sources. These sources can include academic standards, curricula, student assessments, teacher evaluation criteria, professional development (PD), and peer collaboration opportunities. These components have been identified as part of an instructional system that states and districts often leverage to implement standards-based or other teaching-related reforms (Coggshall, 2012; Davidson and Frohbieter, 2011; Kraft and Gilmour, 2017; McGuinn, 2012; Rentner and Kober, 2014a; Rentner and Kober, 2014b; Woulfin and Rigby, 2017).

In an ideal coherent instructional system, these components convey reinforcing messages to teachers about what to prioritize and how to teach. However, component messages often are not reinforcing. One reason for this is that districts and schools often attend to and send messages about multiple policies and initiatives at once, leaving teachers to make sense of the disparate messages. How teachers make sense of the messages and interact with them ultimately inform their instructional practices and are consequential for student learning.

Despite the potential consequences of incoherence in teachers’ instructional systems, little attention has been paid to teachers’ perceptions of coherence. We conceive of instructional system coherence as the extent to which multiple key system components related to teaching and learning provide the same signals and supports to teachers and leaders about what instruction should look like. Incoherence occurs when one or more components are not linked to other messages within the larger instructional system or provide conflicting signals to teachers about what instruction should look like. Smith and O’Day’s recognition of the importance of multiple supports within school systems indicates the centrality of coherence to educational change, quality teaching, and improved student outcomes (Smith and O’Day, 1990; O’Day and Smith, 1993).

Available research has largely focused on the connection between two instructional system components, such as PD and standards (Allen and Penuel, 2015), standards and curricula (Hodge, 2019), collaborative practices and standards (Stosich, 2016b), academic standards and teacher evaluation (Stosich, 2018), and PD and assessment (Heredia, 2020). Limited research has focused on more than two coinciding components of an instructional system (teacher evaluation, PD, student assessments, standards, and curricula) and how they reinforce

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**KEY FINDINGS**

- Teachers receive messages about what and how to teach from many sources within their instructional system (e.g., academic standards, curricula, student assessments, teacher evaluation criteria).
- According to our interviews, the most common messages teachers received in 2021–2022 included directives to prepare students for standardized assessments, align instruction to standards, use strategies to promote student engagement, and create safe environments for students returning to in-person instruction after school closures because of the coronavirus disease 2019 (COVID-19) pandemic.
- Teachers received little or no explicit messaging about teaching for equity and diversity or supporting students’ individual needs, and they indicated that implementing curricula with fidelity could conflict with supporting individual student needs.
- Teachers perceived limited coherence in their instructional systems beyond alignment of standards, curricula, and assessments.
- More-coherent instructional systems supported teachers’ feelings of confidence and sense of well-being, while incoherence was associated with frustration and anxiety at having to navigate conflicting messages.
- When teachers received conflicting messages from their instructional system, they used various strategies to cope, from relying on peer collaboration supports to disengaging from the instructional system.
or conflict with others. One notable exception is Russell and Bray’s 2013 piece, which examines how educators made sense of the implementation of both standards-based accountability measures and special education policies. Similarly, Hodge and Stosich (2022) explore how educators respond to policies embedded in four instructional system components: standards, curricula, high-stakes assessment, and teacher evaluation. They found that, even in schools with well-coordinated messaging, educators may not experience coherence (Hodge and Stosich, 2022).

This report adds to the limited body of research that considers the messaging teachers receive from multiple instructional system components and the coherence of that messaging. **We explore the messages teachers receive about what to teach and how to teach English language arts (ELA) and mathematics in K–12 schools in the United States, as well as teachers’ overall perceptions of coherence and incoherence in instructional systems and how they navigate such systems.** Figure 1 represents our conceptualization of an instructional system and its components. In it, we show how messages from each component can reinforce or conflict with one another and how these messages ultimately influence teachers’ understanding about what and how to teach. Because no empirical evidence that we know of to date has indicated that any given component or pair of components is more pivotal to a coherent instructional system or more critical for informing teachers’ practice, we position the seven components equally. As part of the study, we seek to determine whether teachers characterize certain components as critical to system coherence. Our exploration of such a system is part of a larger study that draws on national surveys to understand how various components of a school’s instructional system (e.g., standards, assessments, curricula, PD, peer collabo-

### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>COVID-19</td>
<td>coronavirus disease 2019</td>
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<tr>
<td>EL</td>
<td>English learner</td>
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<tr>
<td>ELA</td>
<td>English language arts</td>
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<tr>
<td>IEP</td>
<td>individualized education program</td>
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<tr>
<td>K–12</td>
<td>kindergarten through grade 12</td>
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<td>PD</td>
<td>professional development</td>
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### Definitions of Key Terms Used in This Report

**Coherence** is the extent to which key system components related to teaching and learning are consistent with each other (or reinforce each other) in providing the same signals and supports to teachers and leaders about what instruction should look like. **Incoherence** occurs when one or more components are not linked to the larger instructional system, and/or provide conflicting signals to teachers about what instruction should look like.

**Assessment** refers to both formative and summative assessments at the classroom, school, district, and state levels that teachers give to students to assess their progress toward targets and benchmarks of progress.

**Curricula** are instructional materials (e.g., specific textbooks or instructional programs) on record as formally adopted for use by teachers and/or their school or district. Curricula are intended to constitute a full course of study for a subject and grade level. We include instructional practices, resources, and strategies as part of the curriculum.

**Evaluation** refers to the process by which teachers are appraised on their pedagogical skill, often by outside reviewers.

**Professional development** consists of formal structures presented by schools and districts to support or improve an aspect of instruction through the growth of teachers.

**Teacher collaboration** refers to opportunities for teachers to work with peers to make meaning for their instruction. This includes professional learning communities or common planning time.

**Standards** are benchmarks, often codified at the state level, that present goals for student learning by grade level and content knowledge.
ration) support teachers’ work and how reinforcing messaging can drive instructional system coherence (Polikoff et al., 2020; Wang et al., 2022).

As part of our investigation into messages that teachers receive from instructional system components, we specifically inquired about what, if any, messages they received about how they should address equity and diversity in the classroom. As student populations become increasingly diverse (Ingersoll et al., 2018), teachers must ensure that their instruction meets the different needs of learners, particularly those who have been historically underserved—for example, students of color, students with Individualized Education Programs (IEPs), and English learners (ELs). These students are more likely than other students to attend schools that have fewer resources and supports (Darling-Hammond, 2000), attend schools with higher teacher turnover, or experience policies that fall short of addressing equity. Teachers’ understanding of how to attend to equity and diversity in their instruction, however, is guided both by their previous schema and experiences and by structures built into school systems, such as tracking or ability grouping, which influences teachers’ thinking about what is appropriate to teach students tracked into certain classes (Hodge, 2019). Discussions of equity and diversity in education are increasingly centering the role of institutional structures, processes, and practices (Welton and Zamani-Gallaher, 2018), meaning that policymakers who are working to improve student achievement through more-coherent systems must account for equity and diversity at the systemic and organizational levels. We are interested in where teachers are receiving messages around equity and diversity from and how they make sense of how equity fits with their instructional goals.

The findings from this interview-based study have implications for policy and practice. The study findings point to practices that school and district leaders might adopt to achieve greater system coherence and support teachers in making sense of the myriad policy messages they receive. In addition, the findings can help state- and district-level leaders reflect on how teachers are positioned to enact equitable instruction. Understanding how teachers are processing messaging around equity and diversity
will support schools and districts in implementing effective policy around these goals.

Making Sense of Policy Messages Matters for Teachers’ Practice

Sensemaking theory posits that when individuals experience new ideas, situations, or contexts, they use their previous experiences, knowledge, or beliefs to understand the new information (Weick, 1995). The theory is often applied to teaching to characterize or understand how teachers grapple with new policies or messaging about what or how to teach through such lenses as their beliefs about how students learn best and their experiences with prior reform efforts and initiatives (Maitlis and Christianson, 2014). With ever-shifting policies and reforms in the educational environment, teachers can be confronted with messages that require rethinking their practices. When this happens, their previous beliefs about learning and learners will influence how they engage with new ideas (Patrick and Joshi, 2019; Spillane, Reiser, and Reimer, 2002).

Reinforcing messaging from multiple sources—i.e., when curricula, PD, and teacher evaluation criteria all emphasize a given set of practices—and forums to discuss and process the messages can help teachers make sense of policy changes or educational reforms (Allen and Penuel, 2015; Coburn, 2001; Hodge and Stosich, 2022; Stosich, 2016a). In this way, teacher sensemaking recognizes that teachers make meaning as individuals as well as through collaboration with peers in formal and informal processes (Allen and Penuel, 2015; Coburn, 2001). Without clear reinforcing messages across the system and opportunities and support for sensemaking, teachers may not alter their classroom practices to make them align with the intent of the messaging or reform (Spillane et al., 2002). In these cases, when teachers encounter policies that ask them to change their current practices or understanding, they are likely to shallowly adopt, disregard, or misinterpret the policies (Coburn, 2004; Spillane, 2004; Stosich, 2018). In short, teachers’ response (or lack thereof) to efforts to guide and improve their practice can be influenced by the coherence or incoherence of their instructional system.

This study explores the sources from which teachers receive messages about what and how to teach, what those messages are, and how teachers make sense of those messages. Through sensemaking, we expect that they will identify certain instructional system components as more or less reinforcing of each other and, as a result, perceive their instructional system as having varying degrees of coherence. We expect that teachers will also draw on past experiences and beliefs to navigate perceived incoherence.

How the Study Was Conducted

This study addresses the following research questions:

1. From what sources do teachers report receiving messages about what and how to teach, and what are the key messages teachers report receiving?
2. How do teachers characterize the messaging they receive about addressing equity and diversity in their instruction?
3. How do teachers characterize the coherence or incoherence of their instructional systems, and what supports do they seek for greater coherence?
4. What impact do teachers report that instructional system coherence or incoherence has on their instruction, and how do they navigate incoherence?

Sample

Our qualitative study is based on semistructured interviews with 45 teachers across the United States. Interviewees were drawn from a nationally representative sample of ELA and mathematics teachers who were part of the RAND American Teacher Panel in spring 2022 and who completed the Coherent Instructional Systems survey in spring 2022. In May 2022, we invited a total of 100 teachers (50 ELA and 50 mathematics teachers) to participate. Participants received a gift card incentive upon interview comple-
tion. We completed 45 interviews for a response rate of 45 percent.

Our final sample included instructors responsible for ELA and mathematics instruction in K–12 grade levels and included general education teachers, special education teachers, intervention teachers, and English language teachers. Of the teachers, 31 were female, six were male, and eight did not indicate gender on their survey. They had between four and 38 years of teaching experience; the majority had more than 16 years of teaching experience. The average teacher in the United States typically has around 14 years of teaching experience, which means that our sample, on average, has a few more years’ experience than the overall teacher population across the United States (National Education Association, 2018). Table 1 shows the characteristics of the teachers we interviewed.

Data Collection

In late May to early June 2022, a team of five qualitative researchers and analysts conducted 45 interviews by phone or videoconference; each interview lasted 45–60 minutes. In addition to brief background questions, the semistructured interview protocol consisted of four substantive subsections reflecting the research questions: (1) general messages and guid-

TABLE 1
Sample Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>English Language Arts</th>
<th>Mathematics</th>
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<tbody>
<tr>
<td>Teacher years of experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–5</td>
<td>1 (4%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>6–10</td>
<td>6 (25%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>11–15</td>
<td>2 (8%)</td>
<td>6 (30%)</td>
</tr>
<tr>
<td>16+</td>
<td>16 (63%)</td>
<td>11 (55%)</td>
</tr>
<tr>
<td>Grade level taught</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K–5</td>
<td>11 (44%)</td>
<td>13 (65%)</td>
</tr>
<tr>
<td>6–8</td>
<td>5 (20%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>9–12</td>
<td>9 (36%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Percentage of students of color taught(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>21 (84%)</td>
<td>14 (70%)</td>
</tr>
<tr>
<td>Low</td>
<td>4 (16%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>Percentage of students with IEPs taught(^b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>13 (52%)</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>Low</td>
<td>12 (48%)</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>Percentage of ELs taught(^c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>10 (40%)</td>
<td>12 (60%)</td>
</tr>
<tr>
<td>Low</td>
<td>15 (60%)</td>
<td>7 (35%)</td>
</tr>
</tbody>
</table>

NOTE: Numbers for student percentages may not sum to total teachers interviewed because of a lack of response. We did not collect information on students receiving free or reduced-price lunch for this sample. ELA teachers \(n = 25\) (55 percent). Mathematics teachers \(n = 20\) (45 percent).

\(^a\) High > 50 percent; low < 50 percent.

\(^b\) High > 10 percent; low < 10 percent.

\(^c\) High > 10 percent; low < 10 percent.
inance teachers reported receiving; (2) guidance teachers received around addressing equity and diversity in their instruction; (3) teachers’ perceptions of relationships among components of the instructional system, with a focus on curricula; and (4) teachers’ perceptions of the influence of system coherence and incoherence on teaching and learning. The interview team shared a version of Figure 1 to acquaint interviewees with the concept of instructional system coherence and orient them to the project at hand.

Data Analysis

We uploaded interview transcripts for analysis to the mixed-methods data analysis application Dedoose 9.0.62 (Dedoose, 2022). Three experienced qualitative analysts iteratively developed an initial coding scheme that reflected the interview protocol, our research questions, and emergent themes that surfaced through team debriefs. After establishing reliability, the analysts independently coded the transcripts using the codebook as a reference. We allowed for emergent coding and met to debrief, discuss, and resolve ambiguities.

We created meta-matrixes for coded excerpts to organize and group findings by code and align them to the research questions (Miles, Huberman, and Saldaña, 2020). Using these matrixes, we noted patterns in the data, looked for comparisons and contrasts, and clustered information. We drew themes and developed assertions from those patterns. Findings reported here represent the themes most frequently discussed by teachers for each research question. We report on themes discussed by at least 10 percent of teachers interviewed or that represent top trends in our analysis of given codes. We also present disconfirming evidence or examples of clear difference from the trend to illustrate the breadth of responses.

Findings

In this section, we present findings associated with each of the four research questions. For each research question, we summarize our overall findings and provide supporting details, including direct quotes from our interviewees.

Overall, teachers reported receiving messages about what and how to teach from multiple sources, especially curricula and standards. Messaging about addressing equity and diversity in instruction was missing or shallow. In general, teachers perceived similarities in messaging between about two instructional system components but did not sense overall system coherence. Teachers navigated this perceived lack of coherence by relying on peer collaboration opportunities to make sense of conflicting messages, although some reported coping by disengaging from the instructional system altogether.

Limitations

There are several methodological limitations to our study. The modest size of our sample (N = 45) and higher number of years of teaching experience among those in our sample means that our findings may not generalize to all teachers and their experiences. Furthermore, teachers self-selected to participate; therefore, we cannot generalize the findings to teachers who did not choose to participate. Moreover, interview responses are prone to self-report bias; interviewees may present socially desirable responses to address self-presentation concerns (Krumpal, 2013).

Although our sample is not representative, we aimed to obtain a wide variety of perspectives and experiences to explore the topic of coherence in instructional systems. Our sample includes teachers from across the country who work in a range of grade levels, work across a variety of subjects, have different levels of years of experience, and work with different populations of students. We did specifically focus on teachers working in schools serving a large proportion of historically marginalized students—students of color, students with IEPs, and ELs. Data on students’ eligibility for free or reduced-price lunch (a proxy for socioeconomic status) were not included in the demographic information collected on teachers, which is a limitation.
From What Sources Do Teachers Report Receiving Messages About What and How to Teach, and What Are the Key Messages Teachers Report Receiving?

Sensemaking literature suggests that teachers receive messages from multiple sources and filter them—often through existing knowledge and beliefs—to make sense of what actions they may need to take (Spillane, 1999; Weick, 1995). According to our data, teachers reported receiving messages about what and how to teach from multiple sources. Table 2 highlights the variety of those sources. With respect to instructional system components, two-thirds of teachers we interviewed reported receiving messages from their curriculum, and half of our interviewees reported standards as a key source of messaging. In terms of system levels, about half of the teachers perceived messaging about what and how to teach from the district and school administration. Less than 20 percent of teachers perceived messages as coming from the state level.

Putting aside the source of the messages, our next findings concern the content of the messaging teachers perceived. On the whole, teachers reported perceiving four key messages about what and how to teach.

**Message One: Prepare Students for Standardized Assessments**

About one-third of the teachers we interviewed said that they received key messages about assessments; specifically, the importance of preparing students for standardized assessments. This mirrors literature on coherence that emphasizes the role of assessments in guiding instructional practice (McDuffie et al., 2017). One elementary ELA teacher stated that “[T]he message I’m getting is get [students] ready for [the state test], get their stamina up, get them reading more, get them to perform better.” A middle school ELA teacher explained, “[T]hat’s the biggest message that we get—teach to the test, teach to the test.” The emphasis on assessment performance held through high school as well. One teacher told us that messaging, while not direct, was still clear: “The only [message] that I’ve really been conveyed is we want to see SAT scores go from this percentile to this percentile.” School leaders were the most commonly named source of these messages urging teachers to prepare students to perform on assessments.

**TABLE 2**
Message Sources

<table>
<thead>
<tr>
<th>Message Source</th>
<th>Prevalence</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>Instructional system component</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum</td>
<td>29 (66%)</td>
<td>Curriculum resources, pacing guides, scope and sequence</td>
</tr>
<tr>
<td>Standards</td>
<td>22 (50%)</td>
<td>State and/or district standards</td>
</tr>
<tr>
<td>Peer collaboration</td>
<td>17 (39%)</td>
<td>Professional learning communities, peers, teacher leaders</td>
</tr>
<tr>
<td>Assessments</td>
<td>11 (25%)</td>
<td>Summative or formative assessments and related data</td>
</tr>
<tr>
<td>PD</td>
<td>10 (23%)</td>
<td>Formal professional learning opportunities</td>
</tr>
<tr>
<td><strong>System level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District</td>
<td>24 (54%)</td>
<td>Messages originate from the district central office</td>
</tr>
<tr>
<td>School</td>
<td>23 (52%)</td>
<td>Messages originate from the school leadership</td>
</tr>
<tr>
<td>Individual</td>
<td>16 (36%)</td>
<td>Messages originate from specific persons not necessarily representative of the state, district, or school (e.g., instructional coach, academic researcher, specialized teacher of ELs or students with IEPs)</td>
</tr>
<tr>
<td>State</td>
<td>8 (18%)</td>
<td>Messages originate from the state (e.g., state department of education)</td>
</tr>
</tbody>
</table>

NOTE: Multiple teachers mentioned more than one source of messaging. N = 45.
Summative assessments themselves, as components of the instructional system, convey similar messages about the importance of scores through the accountability measures and consequences that accompany standardized assessments. One elementary mathematics teacher described messaging that emphasized the importance of students passing state tests: “If they don’t pass . . . they will then be in a small group every day of the following year, just to work on those specific math skills that they didn’t pass in one test one day, one data point.” One high school ELA teacher said, “Nobody is telling us how to look at the data or why this data is valuable . . . . Are we looking at those assessments and actually seeing what kids need to do well on those assessments? No, it’s more like, let’s just keep testing everybody and hopefully the data is going to look good.” Teachers understood that the purpose of data was to demonstrate school performance rather than to inform instructional improvement.

**Message Two: Cover Content Standards to Varying Degrees**

According to teachers, academic standards outlined clear expectations about what to teach. Meanwhile, teachers perceived that leaders around them—like principals—sent varying messages about how to focus on standards.

Some teachers reported that their schools or districts required them to cover all content standards, while others reported being told to focus on a few priority standards. One teacher who was told that their instruction needed to cover all applicable standards over the course of the year said, “You need to make sure you’re teaching the standards, even though the kids don’t understand it . . . you still have to teach the standards.” Because of messages like this, some teachers felt that they needed to prioritize standards coverage over content mastery in their instruction.

In contrast, other teachers said that they were directed to prioritize certain standards, particularly as schools returned from distance learning because of the COVID-19 pandemic. One teacher explained, “Our district did come up with what were called priority standards this year. We let that guide our planning, so we focused almost exclusively on the

“Nobody is telling us how to look at the data or why this data is valuable . . . . it’s more like let’s just keep testing everybody and hopefully the data is going to look good.”
— High school ELA teacher

priority standards.” An elementary mathematics teacher noted, “Our state did a good job of communicating these last two years that [they] understand that [we] might not be able to get to all of these standards . . . they’ve identified . . . essential standards that each grade level needs to know to go on to the next grade level.” These two examples show that some teachers were receiving messaging about how

“Our state did a good job of communicating these last two years that [they] understand that [we] might not be able to get to all of these standards . . . they’ve identified . . . essential standards.”
— Elementary school math teacher
to prioritize given a large set of standards as they worked to help students after the pandemic.

**Message Three: Implement Strategies That Promote Student Engagement**

The teachers we interviewed noted that school administrators and peer collaborators encouraged them to use strategies that would facilitate greater student engagement in the classroom. The messaging often emphasized attending to students’ individual needs. Forty-four percent of teachers described how key messages guided them to focus on centering student experiences and student engagement in instruction. Strategies for achieving this goal included small-group instruction, hands-on instruction, modification of curriculum to meet individual needs based on content mastery, learning students’ backgrounds, and integrating social and emotional learning. For example, one ELA teacher noted that school leaders wanted them to focus on modifying curriculum for engagement. They described it in this way:

> There’s a lot of turning and talking and a lot of noticing and wondering. There’s a lot of speaking in the curriculum. There’s a good amount of writing. . . . At my school . . . because the curriculum was lacking in a lot of engaging activities, [we were] encouraged . . . to add additional supports and engagement into the curriculum to make it work for our class. Because if we [taught the curriculum] scripted, [to] the kids . . . a lot of the content would be above their head[s] completely.

This teacher described that, while the curriculum offered guidance about how to teach, school leaders augmented those messages by stressing that teachers should adjust the curriculum to allow more student interaction.

Teachers also linked assessments and data as sending messages about the extent of student engagement. One teacher’s explanation shows that their curriculum plan was driven by data: “[A]s far as the pacing and who is getting what parts of it, it goes according to what the kids need. It’s driven by data. I progress-monitor every two weeks. I enter all that information. I make charts, line plots, and it goes according to the data.” A math teacher explained that messaging about data-driven instruction as an ongoing process where “we try different things to kind of just get a feel for where [students] are. And then, from there, we kind of set some goals and save data, and then we tend to look at like, every six weeks.” Teachers reported perceiving assessments and curricula as key pieces of instructional systems to support student engagement.

**Message Four: Create Safe Spaces for Students Returning to In-Person Learning**

Teachers received messages to prioritize students’ comfort in school after pandemic-related disruptions. Those messages focused on social and emotional learning, relationship-building, and trauma-informed practices. One teacher noted that “With many students coming off of the pandemic and being home, it’s been difficult trying to bring them back. So, there has been more emphasis on things like social-emotional learning and finding a way to incorporate that into what we do.” Another teacher received PD centered on social and emotional and trauma-based learning, saying that “There was a lot of good messages sent from that . . . being sensitive to possible trauma, things incorporating social emotional learning is a big thing in our district. . . . [T]he message is if we can get them to feel safe, then we can get them to learn at our district.” While standards conveyed messages about what to teach, some school administrators focused on meeting students’ social and emotional needs to build a foundation for academic learning.

**How Do Teachers Characterize the Messaging They Receive About Addressing Equity and Diversity in Their Instruction?**

Teacher sensemaking literature suggests that “teachers’ actions and inactions are shaped by and in turn often reproduce racialized patterns of inequity and injustice both in the classroom and society at large” (Philip, 2011, p. 298). We wanted to know to what extent teachers’ instructional systems conveyed messages to them about how to address equity and diver-
sity in their instruction, with a focus on three historically underserved groups: students of color, students with IEPs, and students learning English. Clear messaging across instructional system components can support teachers in changing their instructional practices.

Our interviews suggest that teachers often lack the guidance to enact change with respect to delivering equitable instruction. According to our data, teachers did not think that messages about equity were dominant in their systems; equity was not among the top four messages highlighted in the previous section. Some teachers did report receiving some messaging about the importance of attending to equity and diversity in their classrooms. Overall, though, most of the teachers we interviewed felt that their instructional systems provided nonexistent, shallow, or conflicting messaging on this topic. We detail these tensions in the following sections.

**Most Teachers Reported Limited or No Explicit Messaging About Supporting Students’ Diverse Needs**

Teachers characterized messaging about equity and diversity as largely absent from their instructional systems. Teachers acknowledged that it was important that they addressed the needs of historically underserved students, including students of color, students with IEPs, and ELs. Teachers noted that they expected to receive messages about addressing equity and diversity from PD. However, schools did not always require teachers to attend PD related to addressing the needs of students of color, students with IEPs, or ELs. Teachers noted that they expected to receive messages about addressing equity and diversity from PD. However, schools did not always require teachers to attend PD related to addressing the needs of students of color, students with IEPs, or ELs. Instead, some schools left it up to individual teachers to seek and attend voluntary trainings. As a result, many teachers did not attend these trainings. A mathematics teacher noted that “I think a lot of teachers, if they’re not provided the supports to be able to implement [policies for equity and diversity], they just sweep it under the rug. They . . . only teach what’s in front of them. They’ll only teach from a textbook, and our kids suffer.”

These findings illustrate that teachers understood the importance of supporting underserved students but lacked the support or guidance—for example, through curriculum materials or PD—to implement strategies that ensure equity and diversity in the classroom.

Teachers characterized messages they received around addressing the needs of historically underserved students as shallow. For example, PD conveyed weak messages about how to teach for equity. As one middle school ELA teacher noted, in PD sessions, they are often given “the bare supports;” that is, teachers are told that the strategies they learn in PD “can also apply to your English language learners, but [ELs are] never the main focus. It’s always an afterthought in every PD that I’ve ever gone to.” Curricula also conveyed inadequate or shallow messaging about teaching for equity and diversity. One math teacher noted that their district curriculum “doesn’t really have support [for historically underserved students]. It really only has supports for gifted students.”

Only a few teachers described messages about equity that were more substantial. These messages involved encouraging teachers to modify curricula to reflect students’ diverse cultural and racial backgrounds. About 13 percent of ELA teachers, for example, discussed receiving curriculum support through reading lists that included authors from a diversity of backgrounds. These were the exceptions, however. In general, teachers characterized the messaging about equity and diversity as offering little guidance and support.

**Messages to Implement Curriculum with Fidelity Conflicted with Teachers’ Desire to Support Individual Student Needs**

Teachers characterized messages coming from their instructional systems—typically communicated through curriculum and PD—as hindering their ability to support historically underserved student populations, especially students performing below grade level. That is, teachers said that the messaging to implement curricula and deliver instruction at a specific pace, particularly to make up for “lost” learning because of the COVID-19 pandemic, was inconsistent with messaging about meeting students “where they are” and supporting individual needs. Teachers observed that students who struggled with the rigor or pacing of a standardized curriculum were left behind, or they felt overwhelmed trying
to teach below-grade-level foundational skills and grade-level standards.

Teachers did not receive messages that would help them navigate these conflicting priorities. One mathematics teacher noted that the message was to simply "move on" and not focus on differentiated work when students struggled with a particular skill or concept. Another perceived the message that their curriculum ought to meet the needs of students with IEPs but observed that the curriculum provided insufficient instructional materials and resources for their students to master concepts. Multiple teachers reported that, to alleviate the tension between teaching with fidelity and supporting individual student needs, school districts asked that teachers focus on identified priority standards. However, the curricula they were responsible for implementing day to day did not reflect this messaging, leaving teachers feeling frustrated and ineffective. One mathematics teacher said,

[The curriculum is] not beneficial at all, I absolutely hate it. It's not beneficial at all to my kids who are struggling, who had COVID and missed two weeks of school, and missed the whole unit, because that's how short the units are, and then they fall further and further behind. So, it doesn't feel to me to be serving anybody well.

In sum, instructional system components might message about supporting diverse groups of students, but they also might present conflicting ideas to teachers about what and how to teach. The overall lack of concrete and consistent messaging on equity and diversity suggests that teachers did not find their instructional systems coherent around this topic.

How Do Teachers Characterize the Coherence of Their Instructional Systems?

It is not clear from existing research whether a given component or pair of components is more pivotal to the coherence of an instructional system or more critical for informing teachers’ practice. We explored which components teachers considered or privileged when they assessed the extent of coherence or incoherence in their systems. Our findings show that teachers in this study perceived some level of coherence in their instructional systems, especially when standards were aligned with curricula. A strong relationship between student assessments and curricula also signaled coherence to teachers. However, many more teachers perceived a certain incoherence in their instructional systems—in particular, this is because of a perception that teacher evaluation and student assessments are at odds with other components of the instructional systems, particularly curricula and PD.

Teachers Typically Perceived Their Systems as More Coherent When Standards and Curricula Were Aligned

Teachers who characterized their instructional systems as coherent perceived alignment between messaging conveyed by curricula and other instructional system components. More than half of the teachers discussed standards alignment with curricula as a core element of coherence and indicated that this alignment sent strong messages about what and how to teach. This is also aligned with previous research on coherence (Hodge and Stosich, 2022; Polikoff et al., 2020). One middle school math teacher described alignment as follows:

There’s not too much that I needed to do with the curriculum to ensure that all the standards were covered this year for both fifth and sixth grade... [the way] that it’s presented, the way that they usually focus on a skill and then focus on problem-solving skills with the new skill they just learned, I think it’s a really good setup.

Teachers perceived PD experiences to be aligned with curricula when those experiences provided curriculum-linked support and instructional strategies that were directly applicable to their day-to-day practice. One elementary ELA teacher described feeling as though components of their instructional system converged to support them in delivering the curriculum because the curriculum developer–led PD helped teachers troubleshoot implementation. This teacher said, “Every time I’ve gone to a [curriu-
lum] training, I’ve always walked away with learning something new that could help me the very next day.”

**Teachers Perceived System Incoherence When Their Curriculum Was Not Supported by Other System Components**

The teachers we interviewed tended to characterize their instructional systems as incoherent when the teaching evaluation criteria or processes did not connect (or conflicted) with the curriculum. Teachers also perceived system incoherence when there was a disconnect between curricula and student assessments.

**Perceived Disconnect Between Curricula and Teaching Evaluation Criteria**

About two-thirds of teachers said that the messages conveyed by the teacher evaluation criteria or process left them uninformed or confused about what to teach. Specifically, the curriculum they were expected to implement conflicted with what they were evaluated on. One teacher discussed the conflict in this way:

> I got rated low on [my evaluation because of] my inability to integrate all of the subjects. My response to that was, how would you like me to integrate math if I am following [our curriculum], which is what you’re telling me I have to do. So that is a piece that doesn’t align. [Also, in evaluation observations.] they really want things to be inquiry based, but that doesn’t align with the [curriculum].

Although this teacher tried to follow the curriculum with fidelity, it did not lead to a successful evaluation.

For other teachers, the evaluation process lacked messaging that related to curriculum implementation at all. One ELA teacher stated, “Unfortunately, I . . . haven’t received a whole lot of feedback that was really helpful, in regard to [implementing] the curriculum.” Teachers rarely perceived their evaluation systems to be working in concert with the curricula to support them in how to teach, but one teacher provided an example. Their administrator provided targeted post-lesson observation feedback on how they could have implemented the curriculum and the instructional activities with a higher level of cognitive demand, engaging students in deeper thinking: “My principal did come in and see me teach and give recommendations to help me make what we’re doing a little bit more rigorous.” In sum, teachers regarded teacher evaluation as ineffective at conveying messages about what and how to teach unless its connection to curriculum was made clear. This mirrors prior literature hypothesizing that teacher evaluation sends largely superficial messages about what and how to teach and potentially contradicts messages encoded in other instructional system components, and is therefore a source of system incoherence (Hodge and Stosich, 2022; Stosich et al., 2021).

**Perceived Disconnect Between Curricula and Assessments**

As has been explored in previous research (Abrams, Varier, and Jackson, 2016; Bonner, Torres Rivera, and Chen, 2018), teachers in our sample frequently reported that curricula and assessments conveyed conflicting messages about what and how to teach. Forty-four percent of teachers noted incoherence, with teachers making such statements as “We’re not testing what we’re teaching or being told to teach,” and “The assessments are not very well aligned with what we’re teaching and how we teach it.” This mismatch between curricula and standardized assessments also extended to how curriculum assessments measured skills differently than standardized state tests did. One teacher noted that

> The state test is a lot more like fill in the blank and multiple choice. . . . Whereas the assessments they get [in our curriculum] are writing

> “We’re not testing what we’re teaching or being told to teach.”

— Middle school ELA teacher
and critical thinking. . . . those higher-level skills that help kids become more thoughtful like scholars. The way they’re formatted is very different. The level of rigor of the questions is very different depending. . . . [The state test is] not necessarily meaningful . . . because it’s not accessing that higher level thinking, which is what they purport to . . . want from us and from kids.

In a few instances, teachers described alignment between student assessment and curriculum. This occurred when formative or diagnostic assessment results—rather than standardized, summative tests—helped “determine how you can better improve on your practice. Usually, it’s focusing on one skill or standard to reteach it in a different way to hopefully help the students to understand it a little bit better.” In other words, teachers perceived instructional system coherence when they had access to curriculum-aligned assessment data that can be interpreted and used to point to student misunderstandings or areas of weakness.

What Impact Do Teachers Report That System Coherence or Incoherence Has on Their Instruction? How Do They Navigate Incoherence?

In the interviews, teachers identified the ways in which instructional system coherence and incoherence affected them and their students. Those who felt that their systems were coherent indicated that it boosted their confidence in themselves and their students and contributed to their well-being. On the other hand, perceptions of incoherence increased teacher frustration and brought about feelings of confusion and discouragement. Teachers who felt this way talked about mitigation strategies. These strategies included developing their own sense of coherence by anchoring their practices to a specific instructional system component (e.g., peer collaboration, curriculum) and using their knowledge of their students to build meaningful educational experiences for them.

Coherent Systems Gave Teachers Greater Confidence and a Sense of Well-Being

Teachers reported that coherence in their instructional systems helped them feel confident that their instruction was effective, promoted a greater sense of well-being, and brought “value to what [they were] teaching.” When instructional system components convey reinforcing messages about what and how to teach, it strengthens teachers’ understanding of effective teaching and led to them approaching their jobs with greater security and creativity. For example, one ELA teacher stated that “Reinforcing messages help you to be confident [in] your instruction. I’m going to be able to take a little risk, if you’re secure in what kids need to know and be able to do. You can feel a little bit more flexible, [or] creative in how you approach our kids.” Similarly, one high school mathematics teacher said,

“Reinforcing messages help you to be confident in your instruction.”

— High school ELA teacher

There’s a lot of stressors when it comes to teaching in general. . . . I would say [instructional system coherence] really brings forth the enthusiasm for the teacher because there is a pathway, and we still have the autonomy to make it our own. . . . [K]nowing what the starting point is, what the end goal is, and [the messages] being so black and white, . . . it really gives a sense of confidence.

This description shows that the coherence in the system provided clarity around what and how to teach, which helped this teacher develop a sense of well-being despite the complexities of the profession. The teacher also described knowing beginning and end goals and having greater focus, more confidence, and greater enthusiasm for the work as benefits of a coherent instructional system.

Overall, our analyses suggest that instructional system coherence can provide a solid foundation
for teachers, enabling them to confidently deliver instruction and support students.

**Teachers Felt Frustrated and Anxious When They Perceived System Incoherence**

Conversely, when teachers perceived incoherence in their instructional systems because of unclear or conflicting messages—particularly among curricula, assessments, and standards—they felt frustrated and anxious. Teachers used such words as “disheartening,” “frustration,” “rigid,” and “stressful” to characterize how they felt. One mathematics teacher described how a perceived disconnect between curricula and assessments affected their teaching as follows:

I feel very frustrated by it because I want to do what's best for my students, and I want them all to be successful . . . [but] I don't set them up for success when I follow the curriculum this way because it’s just not meeting those needs. But I'm a rule follower most of the time, and so then I have anxiety when I’m not doing what I'm supposed to do, and I’ve gotten in trouble for it. . . . I don’t want to be the person who’s just like blindly following along.

Misalignment in messages also contributed to a lack of trust between administrators and teachers. One teacher expressed a sense that “maybe [administration is] trying to make us fail.” Teachers’ sense of confidence and autonomy eroded when they perceived conflicting messaging from their instructional systems about what and how to teach.

Among teachers we interviewed, the overwhelming response to system incoherence was frustration, anxiety, and lack of confidence. Only one teacher expressed less concern about teaching in an incoherent system, largely because they had a strong relationship with the district coach, who helped them prioritize messaging.

**Teachers Explained Three Strategies They Use to Navigate Conflicting Messages**

Teachers identified several different strategies for dealing with perceived instructional system incoherence, from collaborating with peers to make sense of conflicting or unclear messages about what and how to teach to disengaging from the instructional system altogether.

**Strategy One for Addressing Incoherence: Peer Collaboration**

Research has shown the importance of professional communities and collaboration in teachers’ sense-making (Coburn, 2001; Spillane, 1999). This strategy figured prominently in interviews as well. Teachers, when they work together, could support one another in making sense of conflicting messages among system components:

With our teacher-based teams, a lot of times, we take a part of the curriculum, and then we’ll develop something from the curriculum, and make sure it’s meeting standards that they might see on state tests too. We’re not teaching to the test, but we’re using the standards that they might also see and the types of questions that they might see too.

Teachers discussed how they worked with peers to understand their curricula, including rigor, pacing, and alignment of curricula across grades. They also noted how they worked with peers to make sure that standards were well integrated in curricula and that assessments, in turn, were set to measure these standards. One middle school mathematics teacher put it this way:

I find that time to be the most beneficial for me because you can really bounce ideas off the teacher, [and find out] what strategies work. [Peers] may have something that is good that you didn't think of. Everybody's basically teaching the same unit, but the material might be modified differently for each class.

As the quotation above suggests, peer collaboration can support both an individual teacher’s instruction and cohesion between curricula and standards more broadly. Through collaboration, teachers can take standardized content and modify it to support students with varying needs.

One ELA teacher expressed the idea that peer collaboration improved a sense of cohesion among other teachers, their students, and themselves, as well as between different instructional system components:
It is important to be trusted, to feel that someone trusts your judgment, and to feel as a professional that you’re going to be able to support student learning because you know students. . . . You learn from one another and figure out the best ways to give your students the best chance of success.

Peer collaboration can support teachers to make sense of unclear or conflicting messaging about what and how to teach, and in this way, it provides space for teachers to mitigate the negative impacts of perceived system incoherence.

Strategy Two for Addressing Incoherence: Reliance on Specializing Teachers and Previous Experience

In the absence of messages about addressing equity and diversity in their instruction, some teachers relied on their prior experiences or knowledge. Teachers with specialized knowledge—for example, about culturally relevant pedagogy—reported drawing on it; meanwhile, those without such knowledge were not systematically guided to develop it. Instead, general education teachers often described relying on experts for support. Although reliance on specialists does not in itself point to a failure in the system, it does highlight that the capacity across staff to address equity and diversity in classrooms is often limited. About 20 percent of teachers in our sample reported relying on teachers of ELs or offices to support their instruction of students learning English. One ELA teacher noted their reliance on an expert:

I had to go to one of the EL teachers and say, “Hey, how do you start, like what’s the basics? . . . And hey, [how do you] help them [with] vocabulary?” . . . So that was just like a starting point.

Similarly, general education teachers reported often relying on special educators to meet the needs of students with disabilities. One mathematics teacher noted that “between figuring it out within the classroom, [and] getting help from resource teachers to help students [with IEPs], we’re figuring [it] out on our own a little bit without any sort of strong messaging.”

Meanwhile, teachers who were in some of these specialized roles—such as special education teachers or intervention teachers—reported a lack of specific training or support for themselves within their instructional systems. Interviews indicated that systems placed heightened responsibility on special education teachers to meet both the needs of their students and those of the general education teachers they supported, without specialized PD that was specific to their roles. One middle school mathematics teacher of students with IEPs shared the following:

I think they do try and include everybody [in general PD], but I think for the most part, when you look at most of the teachers in the building, there’s not as many teachers like me [as] there are that [teach primarily] students that don’t have like disabilities or English language learning needs. So . . . [w]e kind of get forgotten about.

This was echoed by a high school ELA teacher who taught students with IEPs exclusively. The teacher stated that “Sometimes we could get conflicting messages in the [schoolwide] PD because they don’t take into consideration that everybody there isn’t a general educator, and all the students aren’t general ed students.” In the absence of any messaging from instructional systems about how to support underserved students and attend to individualized student needs, teachers were left to rely on previous knowledge or seek out peers in the hope of finding teachers with specialty knowledge to support them.

Strategy Three for Addressing Incoherence: Disengagement from the System

One other strategy that teachers reported using to navigate a lack of guidance or incoherence was to disengage completely from the instructional systems. One-quarter of teachers we interviewed described mentally “checking out.” These teachers simply ignored conflicting messaging. One mathematics teacher that perceived a lack of guidance from PD for implementing the curriculum in ways that address students’ needs said, “I just check out . . . because I’m not gonna [use generalized PD], I’m not gonna be able to do it.” Others pushed through what they had to teach and hoped for the best while feeling frustrated. One mathematics teacher noted that their assessments and standards did not match;
moreover, the state standardized assessment and the curriculum-aligned benchmark assessments were on different grade levels both from each other and from the curriculum. This teacher disengaged by ignoring formal messages, relying instead on what they believed would be best for students: “I’m not vocal, ‘Oh, this doesn’t make sense. Why are we doing this?’ I just say, ‘Okay.’ And then, I go and do what I know is best practice for the students.” When faced with incoherent systems, some teachers completely checked out or fell back on their own pedagogical knowledge to navigate conflict.

**Recommendations for Policy and Practice**

In summary, we found that teachers’ understanding of what and how to teach is informed by many components of the instructional system, including standards, curricula, student assessments, PD, and peer collaboration opportunities. A lack of messaging around equity and diversity led to teachers ignoring, misunderstanding, or shallowly adopting practices aimed at increasing these goals. Teachers we interviewed reported that coherence in messaging among instructional system components supported their confidence in enacting classroom practices that benefit student learning and achievement. On the other hand, incoherence created anxiety and decreased teachers’ sense of self-efficacy. When teachers perceived conflicting messages, they turned to peers or their own prior experience to make sense of the messaging; some reported disengaging from the messaging and the system entirely. Given these key findings, we offer four recommendations for district-level (and other) policymakers.

**Audit the Messages in Your Instructional System and How Teachers Understand Them**

The first step in ensuring more-coherent messaging is to understand teachers’ current perceptions of those messages. For that reason, leaders could benefit from auditing the messages they are sending to teachers about what and how to teach, documenting where the messages reinforce and where they conflict with one another, or where teachers perceive them to be reinforcing or conflicting. This can help leaders identify sources of instructional system incoherence and therefore areas of system improvement. As part of this study, we are developing a tool that could support schools or districts to undertake such an examination of their instructional system coherence. This tool is called *The Improving Instructional System Coherence Toolkit* (Kaufman, Wang et al., 2023), and it gives district and school leaders an opportunity to gather perceptions of coherence among their staff and consider areas of incoherence and how to improve them. Partnering with teachers as key stakeholders in this work to improve system coherence can help bridge gaps between intentions and perceptions.

**Take Action to Ensure That Key Components of the Instructional System Provide Clear and Coordinated Messaging**

Upon auditing instructional system coherence and learning about areas of potentially conflicting messages, system leaders should launch system-improvement efforts aimed at ensuring that various system components convey clear messages about teaching and learning that reinforce each other. For example, when considering PD activities and programs, school leaders and district administrators might consider how these activities and programs ultimately support teachers’ implementation of the standards-aligned curricula that teachers are required or recommended to use. Because our interviewees particularly noted that teacher evaluations rarely provide messages about teaching and learning that connect with other components, leaders have an opportunity to strengthen system coherence by embedding expectations, standards, and PD in teacher evaluations.

It should be noted that the burden of incoherence largely has been carried by teachers who attempt to make sense of multiple messages and policies that come to them from the wider educational system. School, district, and state educational leaders should consider how to reconcile potentially conflicting
messages about core instructional system components before they reach teachers. For example, if states prioritize standardized test scores for funding while districts prioritize equity and diversity goals, district leaders should ensure that the message they convey to teachers is clear and coordinated.

Consider How to Strengthen Peer Collaboration So That It Supports Teachers’ Sensemaking of Instructional System Messaging

Teachers we interviewed noted that peer collaboration offers especially effective support for making sense of multiple or conflicting messaging and navigating instructional system incoherence. For teachers collaborating, “the structure of . . . informal alliances among teachers shape[s] the process, with implications for ways in which messages from the policy environment influence classroom practice” (Coburn, 2001, p. 145). Yet teachers also noted that peer collaboration happened infrequently during the school year. School leaders and district administrators should consider how to make and protect time for peer collaboration to support teacher sensemaking and potentially provide guidelines and strategies for teachers to address incoherence within that peer collaboration.

Prioritize Equity and Diversity Messages in Instructional System Components

Nationally representative surveys from 2017 and 2018 have shown growing political contention around attention to equity and diversity initiatives in public K–12 schools; political tensions have pushed school leaders to avoid conversations that advance equitable instruction (Rogers and Kahne, 2022). Our findings indicate that teachers received little to no messages—or, at best, shallow messages—about how to address these issues in their classrooms. In the wake of political conflict, school and district leaders must actively work to build environments and instructional systems for equity and diversity. State, district, and school leaders play a key role in advancing equitable instruction through the guidance and supports they provide related to various instructional components—for example, curricula, PD, and assessments. To meet the needs of historically underserved students, schools and districts need to provide clear and specific messaging around expectations of how to serve different student populations and ensure that messaging is aligned across components.

For example, school and district leaders can consider how well the curriculum programs they select provide culturally relevant pedagogies and resources. They can consider providing PD to support teachers in building spaces for respectful dialogue and debate so that students can engage with and support each other and teachers in making sense of issues of equity and diversity in the classroom (Rogers and Kahne, 2022). School and district leaders can further offer teachers time and space to reflect on how they make sense of messages (for example, from curriculum and PD) and the implications for addressing the needs of historically underserved students. To this end, school leaders can develop frameworks for peer collaboration that center conversations about equity and diversity in their instruction. To reinforce this priority, districts can structure teacher evaluation to take into account how well teachers are engaging in equitable instruction in their classrooms. Moreover, school and district leaders should consider how to advance the capacity of teachers in specialized roles, such as special education or EL education experts, to support general education teachers in better serving students. These actions combined can encourage awareness of equity and diversity issues and help teachers make sense of messages about centering students’ abilities and backgrounds.

Conclusion

Instructional system coherence plays an important role in improving teaching and learning. Clear and coordinated messages support teachers to teach in ways that support the district’s or school’s vision; they support teachers to make sense of messages about what and how to teach and integrate new knowledge or processes into their instruction (Coburn, 2001; Stosich, 2016b). When messaging is
unclear or conflicting, or when such policy levers as PD, teacher evaluations, and peer collaboration do not support each other, teachers struggle to fully understanding their instructional systems, leading to frustration, lack of creativity, and potentially burn-out and attrition. When teachers do perceive system coherence through reinforcing messages, their sense of what and how to teach becomes clearer. This enables them to teach with more creativity and confidence and sense a positive influence on students. A coherent instructional system helps teachers find the best way to lead their students to success. As one mathematics teacher put it,

[A coherent instructional system] helps me because at the end of the day, you want your students to be successful. [It] is not so much a curriculum or even a state test. Your students need to be successful in life. So, I try not to teach to a test. And I try not to teach a curriculum.

This teacher notes that a coherent instructional system is made up of many components, and each part affects the whole system of student learning. Coherent instructional systems work to support teachers in achieving the goals that are likely to have drawn them to the profession in the first place; that is, supporting students’ growth, development, and sense of purpose.

Coherent instructional systems can provide clear guidance to teachers to support equity, diversity, and student growth and help them make sense of new policies and information to achieve this goal. An incoherent system, with instructional system components that send conflicting messages about what and how to teach, can lead to decreased confidence in supporting student learning. Key steps to increased coherence include deliberate messaging and support and specifically incorporating equity and diversity into each element of an instructional system. We suggest that this will increase instructional system coherence around how to best support historically underserved students and lessen the overwhelming burden on teachers grappling with policy changes and implementation.

Appendix. Interview Questions and Analysis Codes

In Table A.1, we provide our four research questions, corresponding survey questions, and example codes we used to organize survey responses.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Interview Questions Analyzed</th>
<th>Example Codes</th>
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<tbody>
<tr>
<td>Where do teachers report receiving messages from about what and how to teach, and what are the key messages teachers report receiving?</td>
<td>Where do you get messages about what to teach in [ELA/math] and how to teach it?</td>
<td>Messages (where) • See Table 2.</td>
</tr>
<tr>
<td></td>
<td>What are the main messages you get about what to teach in ELA and how to teach it?</td>
<td>Messages (what) • Cover content standards • Prepare for assessments • Attend to student engagement • Address post-COVID needs • Address equity and diversity • Other</td>
</tr>
<tr>
<td>How do teachers characterize the messaging they receive about addressing equity and diversity in their instruction?</td>
<td>Are you getting messages about what to teach and how to teach it that help you address the learning needs of diverse groups of students (e.g., ELs, students with IEPs, students of different achievement levels or ethnicities)? If so, what are the messages?</td>
<td>Messages (what) • Address equity and diversity Student population • ELs • Students of color • Students with IEPs • Struggling students • Other</td>
</tr>
<tr>
<td>How do teachers characterize the coherence or incoherence of their instructional systems, and what supports do they seek for greater coherence?</td>
<td>Here are all the components that we hypothesize give you messages about your instruction [show Figure 1]. Thinking across all of these components, are there ones that stand out to you as particularly reinforcing of others? Which ones?</td>
<td>Coherence or incoherence • Connect • Disconnect • Unclear Components • Curriculum • Assessments • Evaluation • PD • Peer collaboration • Standards Curriculum • Connection with assessments • Connection with evaluation • Connection with PD • Connection with peer collaboration • Connection with standards</td>
</tr>
<tr>
<td>What impact do teachers report that instructional system coherence or incoherence has on their instruction, and how do they navigate incoherence?</td>
<td>What impact, if any, does receiving reinforcing or conflicting messages have on you and your instruction?</td>
<td>Impact • Impact of coherence • Impact of incoherence Navigating incoherence • Rely on peer collaboration • Rely on specialists • Disengage from system • Other</td>
</tr>
<tr>
<td></td>
<td>What impact, if any, does receiving reinforcing or conflicting messages have on students’ learning experiences in your class?</td>
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TABLE A.1
Research Questions, Interview Questions, and Example Response Codes
Note

1 In this survey, teachers answered questions about how many students of color, students with IEPs, and ELs were in their classrooms. The number of students of color in a classroom is based on teachers’ perceptions of their students’ race and self-reporting of how many students they perceived as students of color.

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About This Report

In this report, we used interview data from 45 semi-structured interviews to help determine how teachers perceive and navigate coherence within their instructional systems. We interviewed members of the American Teacher Panel who responded to the spring 2022 Coherent Instructional Systems Survey.

The American Educator Panels (AEP) are nationally representative samples of teachers, school leaders, and district leaders across the country. The panels are a proud member of the American Association for Public Opinion Research’s Transparency Initiative.

RAND Education and Labor

This study was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. The findings and conclusions we present are those of the authors and do not necessarily reflect positions or policies of the foundation that supported this research.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to ewang@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

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