Possibilities and Challenges: Conditions Shaping Educators' Use of Social–Emotional Learning Indicators

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Background/Context: *Researchers have amassed considerable evidence on the use of student performance data (e.g., benchmark and standardized state tests) to inform educational improvement, but few have examined the use of nonacademic indicators (e.g., indicators of social and emotional well-being) available to educators, and whether the factors shaping academic data use remain true for these newer types of data. While the field continues to advocate for greater attention to the social–emotional development of students, there remains little guidance on conditions supporting the use of data on these important mindsets, dispositions, beliefs, and behaviors.*

Purpose/Focus of the Study: *In this article, we use sensemaking theory, prior research on academic data use, and research from a study of "early adopter" California districts to develop a framework for understanding conditions likely to shape educators' use of social–emotional learning (SEL) indicators to inform practice.*

Research Design: *We develop our findings and framework by drawing on prior research and theory, as well as data from a multiyear research–practice partnership with a consortium of California districts that began measuring SEL as part of the No Child Left Behind waiver they received from the U.S. Department of Education. We draw on more than 125 interviews with consortium leaders, central office administrators, leaders, teachers, and staff in 25 schools and six districts to understand how they made sense of SEL and SEL survey data, as well as the practices employed to support SEL.*

Findings: *We find that five categories of conditions appear to shape how educators interpret and respond to SEL indicators: policy context, organizational conditions, interpersonal relationships and interactions, data user characteristics, and data properties. Much like academic data use, we find: (1) the accountability policy context can convey a sense of importance, but may also lead to distortive responses; (2) district and school leaders are critical for allocating time and staff, and cultivating a data culture; (3) collaboration facilitates sensemaking; (4) individual-level knowledge and beliefs can shape interpretation; and (5) timeliness and perceived relevance of data matter. Some of these conditions, however,*

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are uniquely relevant to the use of SEL data, which brings greater ambiguity, uncertainty, and a decoupling from the traditional academic role of educators. We find that including SEL indicators in multiple measure systems can lead to uncertainty and interpretive complexity, and divide educators' attention. Deficit conceptions may also shape sensemaking and are especially germane in the SEL context given documented gaps by race/ethnicity on measures of SEL. Another condition especially relevant to SEL indicator usage is the lack of coherence or clarity around SEL. The frequent misunderstandings of and disagreement about SEL—sometimes shaped by disciplinary background—could lead to different interpretations and responses. All of these conditions suggest that sensemaking and response to SEL data indicators are complex processes that require multiple enabling factors.

Conclusions and Implications: *Given the significant investments in supporting and measuring student social-emotional development, it behooves policymakers, education leaders and practitioners to better understand the conditions facilitating and inhibiting productive use of SEL indicators. The framework provided herein presents a set of concepts and conditions that may be useful in supporting this process. The findings also raise a cautionary flag that while sometimes consistent with the process of using academic data, the use of SEL indicators may present added challenges worthy of attention. We conclude with implications for policy, practice, and research. Notably, education leaders and practitioners may want to invest in building common understanding of SEL and capacity to interpret and act on these indicators, and consider how equity orientations shape understanding and usage of SEL indicators. Policymakers may want to consider more formative uses of SEL data that are provided to educators earlier in the year, and attend to the human capital needs that accompany SEL data usage. Finally, researchers might build on this work by further examining the relationship between SEL and culture/climate and the ways in which educators respond to data on both, and also investigate the outcomes of SEL data usage, such as actions that lead to meaningful improvements in SEL.*

Supporting social–emotional learning (SEL) is a widespread K–12 school initiative that focuses on the affective, or nonacademic, aspects of child development, including self-regulation, interpersonal relationships, growth mindset, and social awareness. All states have standards to guide SEL efforts at the preschool level, eight have standards for K–12 schools, and 25 states are working with the Collaborative for Academic, Social, and Emotional Learning (CASEL) (Allbright et al., 2019; Dusenbury et al., 2018). One logical next step in these SEL efforts is to measure student progress in attaining or developing these mindsets, dispositions, beliefs, and behaviors. The reauthorization and expansion of the Every Student Succeeds Act (ESSA) of 2015 required the use of multiple indicators in state reporting systems, which opened the door to greater consideration of nonacademic indicators. Some localities, such as the CORE Districts in California, have begun to systematically measure SEL (West et al., 2018).

While SEL is broadly understood as a set of student beliefs, behaviors, and attitudes, there remains considerable debate about how to define and

measure it (Allbright et al., 2019; Hamilton & Schwartz, 2019). Further, our collective understanding of the use of SEL indicators—informal or formal data collected on student outcomes on SEL constructs—is nascent. It is this latter knowledge gap we seek to narrow by asking: What conditions shape educators' use of SEL indicators? The use of student academic learning data indicators for accountability and formative assessment has been studied extensively since the 1990s, and we argue that researchers and practitioners can learn from this well-developed knowledge base, which can guide new efforts to promote SEL data use. In addition to this extant literature, we draw on sensemaking theory and an illustrative case of "early adopter" districts with experience measuring SEL in order to develop a framework of conditions that may facilitate the use of SEL indicators in practice. Notably, we focus on SEL indicators that come from end-of-year surveys rather than "early warning indicators," as the latter are not yet widely used and because we were afforded an opportunity to examine the use of SEL summative data at scale in the CORE Districts. We believe the framework developed herein likely extends to all forms of SEL data.

Ultimately, we find that five categories of conditions are particularly relevant to the interpretation and response to SEL indicators: policy context, organizational conditions, interpersonal relationships and interactions, data user characteristics, and data properties. While similar in many respects to those affecting academic data use, these conditions also vary due to greater ambiguity, uncertainty, and a decoupling from the traditional academic role of educators.

In the remainder of this paper, we first provide an overview of sensemaking theory and synthesize the empirical literature on academic data use. We then draw on the case of the CORE Districts to further identify conditions shaping SEL data use. We conclude with implications for researchers, policymakers, and practitioners.

CONCEPTUAL AND EMPIRICAL GROUNDING

SENSEMAKING

Developed by organizational sociologists (Weick, 1995), sensemaking theory would argue that educators do not make decisions or interpret information in isolation, but instead draw on past experiences and beliefs when making meaning of and acting upon new information. Specifically, sensemaking processes (1) organize information, such as the school environment or prior experiences; (2) start with noticing and bracketing, which helps organize what is paid attention to and acted upon; (3) involve processes of labeling and categorizing; (4) are retrospective,

drawing on prior beliefs and attitudes; (5) connect presumptions to actions; (6) are influenced by social factors; and (7) are about action, not only thought (Weick et al., 2005).

Data-use scholars have drawn on sensemaking to analyze teachers' use of academic data (e.g., Bertrand & Marsh, 2015; Park & Datnow, 2017; Roegman et al., 2018). These studies show that educators' sensemaking affected *what* they paid attention to and *how* they responded in practice. By drawing attention to meaning-making processes, these studies—and sensemaking theory generally—also challenge normative–rational assumptions made by data-use advocates that data logically leads to information, then knowledge, and then action. We argue that a sensemaking perspective, much like the use of academic data, has much to offer the process of SEL data use. Theory suggests that three properties of SEL indicators may influence sensemaking processes.

First, SEL data may be highly ambiguous. As we discuss later in the article, we found that educators vary considerably in how they define SEL, and some conflate measures of culture and climate (CC) (e.g., school safety) with SEL indicators (e.g., self-regulation, grit). While they may overlap—a safe climate nurtures positive SEL skills, for example—they represent different units of analysis (SEL focuses on individuals, climate on the school) and are measured distinctly (e.g., Hough et al., 2017). These varied understandings and ambiguities become an occasion for sensemaking, where individuals may bring in prior experience, knowledge, and input from their social context to make meaning of these indicators (Weick, 1995).

Second, there is uncertainty surrounding SEL indicators. The indicators may be used for reflection or for evaluative purposes. Using SEL indicators for evaluation may cause uncertainty and affect the ways in which educators interact with the indicators, perhaps creating a culture of distrust (Lasater et al., 2019). In the literature, uncertainty is posited as another occasion for sensemaking (Weick, 1995).

Third, we argue that SEL (and related indicators) may be perceived as outside the traditional role of educators, or decoupled from the technical core of K–12 schooling. If sensemaking is about connecting thoughts to actions, educators' beliefs that SEL is outside their role may render SEL indicator use less relevant or worthy of attention.

EMPIRICAL LITERATURE ON ACADEMIC DATA USE

Scholars have amassed considerable research on educators' use of data, as evidenced by extensive reviews of research (Datnow & Hubbard, 2016; Hamilton et al., 2009; Hoogland et al., 2016; Marsh, 2012; Piety, 2019; Sun et al., 2016; Young & Kim, 2010). In this article, we draw primarily on K–12

data-driven decision-making (DDDM) literature, focused on school-level educators' use of student learning data—defined as assessment results but inclusive of other forms, such as student work and demographic and behavioral data.

We reviewed the academic data-use literature with the following question in mind: What conditions are associated with educators' *meaningful* use of data? We relied heavily on prior reviews of literature (cited above), as well as frequently cited articles to arrive at prevalent academic data-use conditions. The conditions culled from the DDDM literature fell into five somewhat overlapping categories: (1) system/policy context, (2) organizational conditions and capacity, (3) interpersonal considerations, (4) data user characteristics, and (5) data properties.

System or Policy Context

Scholars generally agree that data use "does not happen in a vacuum" (Piety, 2019, p. 411) and that *higher-level systems and policies* influence educators' use of data. One review identified "factors external to school"—including accountability systems and national policies—among the six most highly cited "prerequisites" shaping implementation of DDDM across studies (Hoogland et al., 2016). While some scholars found that cross-international policy differences shape the types of problems educators focus on during data analyses (Schildkamp et al., 2017), others focused on the ways in which test-based accountability policies in the United States affect responses to data. Some documented "distortive" responses to data, such as adopting practices to raise test scores (e.g., focusing on "bubble kids") rather than genuine learning (Booher-Jennings, 2005; Hamilton et al., 2007; Jennings & Bearak, 2014). Others found that such policies can reinforce biases in data use processes rather than motivate deeper reflection on improving practice (e.g., Brette et al., 2017). Nevertheless, one literature review found mixed evidence on accountability: While some pressure helps convey the importance of using data, too much pressure and no support can be counterproductive and de-motivating (Marsh, 2012).

Organizational Conditions and Capacity

Several reviews of literature highlighted the role of organizational conditions and capacity in facilitating and inhibiting meaningful data use (Piety, 2019; Schildkamp et al., 2017). Studies documented the ways in which *central office characteristics* influence educators' experiences with data (Marsh et al., 2015; Roegman et al., 2018), such as structure, size, financial resources, and degree of regulation (Farrell, 2015).

One related, widely cited condition is the *leadership* within a school (Datnow & Hubbard, 2016; Hoogland et al., 2016; Piety, 2019; Wayman & Jimerson, 2013; Young & Kim, 2010). Aspects of leadership that appear to matter most are

- vision and espoused beliefs in the importance of using data (Datnow & Hubbard, 2016; Marsh et al., 2015);
- support provided via modeling data use, professional development (PD), and time (Schildkamp et al., 2017; Sun et al., 2016);
- mediating between district policies and classroom teachers (Coburn & Talbert, 2006); and
- framing the relevancy of data use for learning and equity (Park et al., 2013).

Another related condition is a supportive or "data wise" *culture* (Lasater et al., 2019; Sun et al., 2016). A highly cited "prerequisite" for data use, culture includes a focus on data for continuous improvement, norms and goals, respect for teacher professionalism, and a sense of collective responsibility (Hoogland et al., 2016). For some, this means a culture that pushes educators to move beyond "testing triage" and identify root causes of instructional issues that may inhibit learning (Jimerson & Childs, 2017). Others emphasize a sense of safety, assuring educators that data are meant for raising questions and probing reflection rather than placing blame (Lasater et al., 2019; Marsh, 2012).

Time is another essential organizational resource highlighted in DDDM literature (Hoogland et al., 2016; Marsh, 2012; Sun et al., 2016; Young & Kim, 2010). Many studies find that insufficient time hinders productive data use and that educators often spend a lot of time collecting and analyzing, but not enough time reflecting on how to respond (Ikemoto & Marsh, 2017; Slavit et al., 2013).

One final aspect of organizational context relates to the *technologies* available to educators. Research repeatedly documents the ways in which complex data systems hinder data use (Cho & Wayman, 2014; Coburn, 2005; Gallagher et al., 2008; Marsh et al., 2006), and the importance of user-friendly data systems allowing for easy storage, analysis, reporting, and tool generation (Means et al., 2010; Piety, 2019; Sun et al., 2016; Supovitz & Klein, 2003; Wayman et al., 2004; Young & Kim, 2010).

Interpersonal Relationships and Interactions

Consistent with the sensemaking frame, many studies found that *interpersonal relationships and interactions* shape the process of data use (Datnow & Hubbard, 2016; Horn et al., 2015). Spillane (2012) notes

that interpretations of data are "not just a function of [educators'] prior knowledge and beliefs, but also a function of their interactions with others in which they negotiate what information is worth noticing and how it should be framed" (p. 126). Scholars highlighted the importance of teacher community norms and values (Horn et al., 2015), as well as trusting relationships (a condition closely related to the culture of safety noted above) (Datnow & Park, 2014; Ingram et al., 2004; Marsh, 2012; Nelson & Slavit, 2007; Sun et al., 2016).

Perhaps the most important condition herein is *collaboration* (Hoogland et al., 2016; Marsh, 2012; Piety, 2019; Sun et al., 2016; Young & Kim, 2010). Discussions with colleagues help bring multiple perspectives to the meaning-making process and to the identification of next steps, and can lead to shifts in perspectives and practices (Cosner, 2011; Schildkamp & Poortman, 2015; Sun et al., 2016; Wayman & Jimerson, 2013). Structured opportunities for dialogue can contribute to deeper changes in practice (Horn & Little, 2010; Marsh et al., 2015), help reduce deficit thinking around students (Park, 2018), and interrupt "mental models" detrimental to equity goals (Bertrand & Marsh, 2015). In addition to peer support, expert *facilitators and coaches* were widely cited as promoters of meaningful data use (Gearhart & Osmundson, 2009; Mandinach & Honey, 2008; Marsh, 2012; Marsh et al., 2015; Nelson & Slavit, 2007; Schildkamp & Poortman, 2015).

Data User Characteristics

Individual data user characteristics also matter greatly. *Knowledge and skills* surfaced repeatedly in the literature as prerequisites for implementing data-use initiatives (Datnow & Hubbard, 2016; Hoogland et al., 2016; Young & Kim, 2010). Scholars identified a wide range of data literacy skills and knowledge required to analyze, interpret, and respond to data (Copland, 2003; Earl & Katz, 2006; Gummer & Mandinach, 2015; Kerr et al., 2006; Little, 2012; Mandinach, 2012; Means et al., 2010; Sharkey & Murnane, 2006; Supovitz & Klein, 2003; Young, 2006). More often than not, studies cited a *lack* of such skills and knowledge as a barrier to productive use (Sun et al., 2016). When there is a scarcity of subject matter knowledge, for example, educators are often unable to apply results to their instruction (Coburn & Turner, 2011).

Consistent with sensemaking theory, empirical studies indicate that *teachers' beliefs* also contribute to data use (Sun et al., 2016). In addition to their beliefs about the utility of data use or their own abilities to effectively use data (Datnow & Hubbard, 2016; Schildkamp et al., 2016), educators' pre-existing ideas about student ability can also shape how they interpret

why particular groups demonstrate better results than others (Bertrand & Marsh, 2015; Datnow et al., 2018). Educators may attribute outcomes to immutable student characteristics and perceived ability—often overlapping with race, gender, class, disability status, and language—rather than reflect on their own practices or school structures that contribute to these results (Orosco & Klingner, 2010; Schildkamp & Kuiper, 2010; Thorius et al., 2014). While such beliefs can reify stereotypes and deficit thinking in data-use processes, it is also possible that when structured and facilitated well, data use can challenge teachers' assumptions about student ability in productive ways (e.g., Lachat & Smith, 2005; Park, 2018).

Research also suggests that teachers' *views about their roles* may shape their willingness to use data. In one study, educators resisted participation in a data-use initiative because they were not convinced it should be part of their job (O'Brien et al., 2019). Motivation—particularly intrinsic or "autonomous" motivation—to use data is viewed by some as a precondition to this process (Vanlommel et al., 2016).

Disciplinary background may also play a part in teachers' beliefs and responses to data. Some research suggests that particular types of teachers may approach the process differently as a result of their training, ways of thinking, or approaches to teaching (e.g., Rangel et al., 2016; Young & Kim, 2010). In one study, teachers who were focused on the transmission of knowledge tended to use data collected "rationally" (e.g., from formal assessments), whereas those focused on interpersonal relationships and supporting students were more likely to ignore such data, preferring data collected intuitively (e.g., via personal observations) (Vanlommel et al., 2018).

Data Properties

Research finds that the *types and features of data* can also affect educators' interpretation and use of data, including the format of the data, timeliness, teachers' role in creating the assessment/generating the data, scope of assessment, and format (Farrell & Marsh, 2016; Halverson, 2010; Wayman & Stringfield, 2006). Research further indicates that to be used, data need to be perceived as relevant, valid, and trustworthy (Coburn & Turner, 2011; Mandinach & Honey, 2008; Schildkamp & Kuiper, 2010; Wayman et al., 2012).

ILLUSTRATIVE CASE OF SEL DATA USE IN THE CORE DISTRICTS

How might these conditions regarding academic data use apply to the use of SEL indicators? To begin to answer this question, we draw on research conducted from 2015–2017 as part of a research–practice partnership

between Policy Analysis for California Education (PACE) and the CORE Districts, a consortium of California school districts (Fresno, Garden Grove, Long Beach, Los Angeles, Oakland, Sacramento, San Francisco, and Santa Ana). The Districts began implementing an accountability system that included both academic and nonacademic measures of performance as part of the U.S. Department of Education-granted waiver from some of their federal obligations under No Child Left Behind (NCLB).[1] Although this accountability system was not fully implemented due to the 2015 passage of ESSA and the termination of NCLB waivers, the CORE Districts continued administering annual SEL and school culture–climate (CC) surveys.

The CORE Districts' staff worked with experts to design a survey for students in grades 4–12 that measures four SEL competencies: growth mindset, self-efficacy, self-management, and social awareness. CORE also administered a survey on school CC that measures support for academic learning, sense of belonging and school connectedness, knowledge and perceived fairness of discipline rules and norms, and safety (for more details, see Gehlbach & Hough, 2018; West et al., 2018). Consistent with studies linking SEL competencies with positive gains in academic and social outcomes (Durlak et al., 2011; West et al., 2016), recent research suggests that CORE SEL data are predictive of positive academic and affective outcomes, including math proficiency and growth, graduation, and English learner redesignation (West et al., 2018).

In partnership with the CORE Districts, our team served as external researchers conducting a series of developmental evaluations, documented in previous publications (see Allbright et al., 2019; Marsh et al., 2018; Marsh et al., 2017).[2] In the 2015–2016 and 2016–2017 school years, we employed a multiple case study design (Yin, 2013). In the first year, we conducted semi-structured interviews with CORE central leaders ($n = 4$), as well as central office administrators ($n = 41$) and school principals ($n = 15$) in six districts. In the second year, we conducted interviews with central office administrators ($n = 12$), school leaders ($n = 15$), other school staff ($n = 13$), and teachers ($n = 26$). We used semi-structured protocols in all interviews, which were audio recorded and transcribed. Each year, team members developed detailed school and district case write-ups drawing on field data and verbatim excerpts from the transcripts. For this article, we reviewed all case write-ups to identify findings regarding the SEL survey data and conditions supporting or inhibiting their use. To maintain the anonymity of respondents, we do not include the names of any organizations or individuals.

In general, we found more SEL indicator use at the district level than at the school level, which was not entirely surprising given the newness of these surveys and the direct engagement of central office staff in CORE-led trainings focused on SEL indicators. CORE leaders believed that starting

with training and building conceptual awareness at the district level would eventually lead to SEL indicator use in schools. Finally, we noticed some conflation and confusion around SEL and CC measures. For example, one principal explained, "You start marrying all the terms that everyone's buzzing: personalized learning, growth mindset, social–emotional learning, positive school environments. On top of that goes test scores. It can get very overwhelming, which is why we package it as school climate."

These overall patterns of limited school-level use of SEL data and variation in SEL understanding provide an important backdrop to the conditions we examine next. Given the conflation found in our field research, examples throughout this article at times pertain to indicators of climate (e.g., school safety) as much as they do to SEL (e.g., growth mindset). In what follows, we organize our case findings around the five categories of conditions surfaced in the review of academic data use literature. In the end, we find that SEL data users relied on many of the same structures and processes as academic data users, but that SEL data use differed in substantial ways. Table 1 provides an overview of these conditions.

Table 1. Factors Potentially Shaping SEL Indicator Use

Broad Conditions Shaping Data Use	Factors Potentially Shaping SEL Indicator Use
System or Policy Context	• **Accountability pressures** could incentivize a distortive response, but also convey a sense of urgency to focus on SEL • Layering of **multiple measures** adds to complexity and uncertainty and could divide attention
Organizational Conditions	• **District leaders** devote resources to and build a data culture that values and gives time to SEL data • **School leaders** allocate time and staff to support interpretation and response • **Data culture** through coordinated teams who analyze and act upon SEL indicators • **Easy access (often via technology)** to SEL indicator results provided in a readable format
Interpersonal Relationships and Interactions	• **Outside coaching and facilitation** helps leaders know how to use and distill SEL data • **Collaboration with peers and experts** enables meaning making and response
Data User Characteristics	• **Beliefs** that support SEL and SEL measurement; deficit-thinking can shape this process • **Knowledge and skills**—varying conceptions and misunderstandings—can also affect interpretation and use • Educators' **views about roles** shape sensemaking • **Disciplinary background** and **teaching predispositions** matter to interpretation and use

Broad Conditions Shaping Data Use	Factors Potentially Shaping SEL Indicator Use
Data Properties	• **Timeliness of data** determines use • **Perceived validity** matters to sensemaking • Data sharing and openness contribute to **usability**

SYSTEM OR POLICY CONTEXT: SEL DATA USE CONDITIONS

Our data from the early years of the CORE Districts suggest that *higher-level policies* provided important context shaping the sensemaking of and responses to SEL data. Several district leaders feared that including SEL indicators in formal accountability measures could incentivize the same type of distortive practices associated with test-based measures (a concern echoed by some scholars, e.g., Duckworth & Yeager, 2015). One central office administrator explained:

> Then how do you prevent gaming on the surveys? . . . The minute you attach an accountability label to it, people just want to know, "What are the questions you're going to be asking me?" and "How do I make sure we hit those?"—which just defeats the whole purpose of getting honest answers on surveys.

Another administrator in the same district echoed the concerns:

> I think that once something becomes measured . . . it's a survey . . . I'll give an anecdote instead. The principal asks the question, "Will you tell us which questions contribute to this [rating] so that we can get the right answer?" Once you make an accountability, it's like you want it [survey results] to read well, not necessarily accurate. That's just an incentives thing.

Several administrators also worried that these distortive practices could then invalidate SEL indicators. Even without the "high stakes" of sanctions, public reporting of SEL indicators (done in at least one case district) could create similar incentives for educators to improve the numbers but not their practices. The current market-based accountability context of school choice and (sometimes) declining enrollment could result in significant pressures to "look good" in order to attract and retain students.

Yet in our second year of research, several administrators attested to the value of including SEL indicators in school performance measurement because it brought greater "awareness" and "willingness to do a more robust job, than had been present previously, but had been kind of a pro forma." One administrator believed including SEL measures in school performance was quite powerful: "Suddenly it showed up on the

performance framework for schools, and that was huge. It was like, 'Oh, so this really matters.'"

A second broad contextual condition that appeared to shape the interpretation and use of SEL data was their *inclusion in a multiple-measure index of performance*. While most of the DDDM literature examines educators' use of one type of data (often test scores) on its own, the inclusion of SEL indicators in a composite measure or dashboard of multiple measures could add greater complexity to the process of data use. Educators may face situations where there are positive results on some indicators and negative results on others (for an example of the CORE SEL dashboard, see Figure 1).

In fact, analyses indicate that the majority of schools in CORE Districts are high on some measures and low on others (Hough et al., 2016). Knowing that 60% of students are proficient in mathematics is very different from knowing students are high on five indicators of SEL and low on five other indicators of math performance. Not only does this uncertainty add to the interpretive complexity, but it also has the potential of dividing educators' attention.

Although most interviewees in our study endorsed the inclusion of nonacademic measures, a minority expressed concerns that such indicators could "distract" educators from the more essential work of supporting academic outcomes. One administrator said:

> I do think it's good that people are thinking about other factors besides academic, but I don't want them to do so at the expense of some of the academics because I think sometimes people think those things are easier to deal with. . . . The real work is the academics for kids.

Even if SEL indicators are not included as a formal school metric, the demand to examine SEL data while maintaining expectations to analyze academic data could create similar tensions around where to focus attention.

ORGANIZATIONAL CONDITIONS AND CAPACITY: SEL DATA USE CONDITIONS

We find *strong district leadership* that prioritizes SEL data matters greatly. Given the competing demands on educators' time, high-level direction and allocation of resources supported and signaled the value of using these data. In case districts, leaders established a culture that valued honest reflection of SEL data over superficial compliance. In one district, leaders used SEL data, combined with other indicators, to make personnel resource decisions such as hiring staff to lead SEL initiatives, professional

Index Results: Social-Emotional & Culture-Climate Domain (All Students)

	Metric Result 2017	Metric Result 2018	Change in Metric Performance from 2017 to 2018	Index Level 2018		Change in Index Level from 2017 to 2018	
Chronic Absenteeism	13.9% Chronically Absent 2017	19.5% Chronically Absent 2018	5.6%	5	out of 10	↓	2
Suspension Rates (includes students suspended and/or expelled)	4.2% Suspended (and/or Expelled) 2017	3.7% Suspended (and/or Expelled) 2018	-0.5%	6	out of 10	→	0
Culture and Climate: FAMILY Overall	92% Percent Favorable 2017	91% Percent Favorable 2018	-1.0%	4	out of 10	↓	1
Culture and Climate: STAFF Overall	83% Percent Favorable 2017	79% Percent Favorable 2018	-4.0%	4	out of 10	↓	1
Culture and Climate: STUDENT Overall	67% Percent Favorable 2017	67% Percent Favorable 2018	0.0%	5	out of 10	→	0
Social-Emotional Skills: Minimizing Fixed Mindset	65% Percent Positive 2017	68% Percent Positive 2018	3.0%	9	out of 10	↑	2
Social-Emotional Skills: Self-Efficacy	47% Percent Positive 2017	49% Percent Positive 2018	2.0%	7	out of 10	↑	1
Social-Emotional Skills: Self-Management	77% Percent Positive 2017	76% Percent Positive 2018	-1.0%	6	out of 10	↓	1
Social-Emotional Skills: Social Awareness	65% Percent Positive 2017	68% Percent Positive 2018	3.0%	10	out of 10	↑	1

Above Average (Index Levels 8, 9 and 10) | Average (Index Levels 4, 5, 6, 7) | Below Average (Index Levels 1, 2, 3)

Figure 1. Sample CORE dashboard with SEL indicators

development, and partnering with nonprofits such as CASEL.[3] In another district, the school board's decision to expand SEL programming signaled that SEL was highly valued.

A long-term district vision surrounding SEL emerged as critical in a few districts. In one case, analysis of CORE survey data initiated a district-wide focus on building relationships that included all elementary school principals developing plans for improving campus climate. In another district, an ongoing and grand vision for SEL was rooted in (1) board-adopted district policy (adopted years before our study) that led to the development of SEL standards, (2) a district mission statement revised to include elements of SEL and climate-building, and (3) inclusion of SEL in teacher PD, family engagement, leadership expectations, accountability systems, and curricula. In this district, SEL indicator use was part of a district vision that pushed for SEL development through policy.

School-level leadership is another important organizational condition. One principal noted that drawing on CORE SEL survey data in combination with another student survey helped shaped the direction of PD for staff:

> We . . . definitely work off of that CORE survey and use the data and look deeper into it. This year we had one of our action plans for growth mindset, and in the growth mindset they focus on the three areas where we scored lowest in that area. We did a mini-survey with students, then our district SEL and Discipline Team are giving professional developments to teachers on growth mindset lessons . . . and then the teachers teach them to the students. There is also PD on the growth mindset of "I can do it, I can learn it."

In this example and others, the availability of district staff to help interpret and act upon SEL data—creating a *data culture* supportive of SEL indicators—appeared to be vital. In another case district, each school had a culture and climate team comprised of teachers and administrators that analyzed SEL surveys to track successes and areas for improvement. An afterschool coordinator at one school noted, "[T]here were two or three areas that we actually went down in, as far as the percentage from last year to this year. So we discussed it, and then we actually brought it forward to the staff, and we're trying to figure out ways of improving it." These coordinated teams, which met monthly, were critical in helping staff analyze survey results.

Finally, some administrators believed that the inclusion of SEL into *easily accessible data systems* contributed to their use. Administrators in one district that had an SEL-related survey in the past believed those old data were never used to the same extent as the CORE data due to inaccessibility. By including the new measures in the district's dashboard, more educators were able to analyze the results.

INTERPERSONAL RELATIONSHIPS AND INTERACTIONS: SEL DATA USE CONDITIONS

Consistent with sensemaking theory and the literature on DDDM broadly, throughout our CORE research, *collaboration* emerged as an important condition for SEL data interpretation and response at all levels. At the highest levels, district leaders believed working with other district leaders and researchers in CORE meetings helped them distill and make meaning of the data. Within-district collaboration also contributed to SEL indicator use. Whether it was the "culture and climate team" or facilitators of PD, individuals with a strong understanding of the survey data and the underlying constructs helped educators make sense of the results and find appropriate action steps. One district was intentional about setting aside time for analysis and reflection during the school year. In a meeting, one administrator challenged teachers to reflect on why students do not feel safe at school. She recounted how teachers had frank discussions:

> So if one started out saying, "Students just aren't connecting with their teacher at school . . . because maybe there is a language barrier." And then maybe there's a language barrier because they're just recently immigrated to the country. And then each of them had a response to the previous person's comment. . . . The final comment from the teacher was, "Maybe the students don't think that the teacher cares, so that's why they've given up. I think it was because students weren't coming to school." . . . And then a lot of the teachers were like, "How do we show our kids more so that we care?" So then it got their wheels spinning about how they need to change their teaching practices.

Giving teachers time to "spin their wheels" on how to connect their teaching practices to student feelings of safety was important to the use of affective indicators.

School-level interactions also contributed to this process. In one case district, school leaders organized staff to be ready to act upon SEL indicator information, so that when SEL data indicate problems, staff have ideas ready to deploy. In another district, educators attributed their success in supporting SEL and SEL data use in part to looping (teachers stayed with the same students for multiple years) and dedicated time to examine data and discuss student needs. "We work together quite a bit," said one teacher. "And when it comes to SEL, that's where a lot of the collaboration happens, because we all have the same kids."

DATA USER CHARACTERISTICS: SEL DATA USE CONDITIONS

Our CORE research suggests that individual data user characteristics may play particularly important roles in the interpretation and use of SEL data. First, *educator beliefs* contributed greatly to SEL data use. Notably, individual support for SEL and measurement of SEL appeared to be a precondition for paying attention to these data. Most educators at all levels expressed support for measuring SEL because it reflected the realities of their schools and placed a spotlight on affective issues in new ways. One superintendent explained, "The social–emotional side . . . needs to play against the academic piece. If you have one without the other, you're probably missing something."

Consistent with the broader DDDM literature and sensemaking theory, evidence also pointed to the importance of educator orientation toward SEL and students. In one district, some staff expressed deficit-based views about students that colored their sensemaking of SEL indicators. One teacher remarked,

> [The students] don't have the role models at home. It starts with the parents. A good portion of our parents never finished school; they don't feel that furthering your education is important. . . . It's always in the back of all of our minds, the effects of poverty on these kids. And how it's not just about learning math, it's about, we call them the soft skills. You know, hold the door open, say please and thank you, because this stuff is not, it seems to be a lost art anymore.

This teacher blamed student background, parents, and poverty for a lack of SEL skills exhibited in school. The principal at this school also related SEL to "problems" students brought from home: "social and emotional learning is best defined . . . is those students who are struggling academically; not because of ability, but because of circumstances that are beyond our reach or control." Making sense of SEL in light of poor academic performance and student background characteristics is one way in which sensemaking may lead educators to embrace deficit conceptions. This orientation might lead a principal to focus PD on helping teachers understand poverty, for example, instead of in-school factors and practices such as self-regulation. Viewing SEL as "beyond our reach" could also limit educators' motivation to reflect on how they might further affect change in SEL competencies.

Knowledge and skills are also conditions that appear to shape SEL indicator use. Over the course of the study, we found widespread differences in educators' *conceptions or understandings* of SEL. Despite strong support for

measuring SEL, few administrators in the first years of our research articulated a clear understanding of specific SEL constructs. When asked about SEL competencies, some administrators responded by discussing climate indicators and student behavior. Describing how they use survey data in the district, one administrator stated:

> Each principal brought up that student SEL survey and what really had resonated with them in the context of the culture that they were trying to create at their schools and what they felt that they could do to create a better sense of belonging [a CC construct], or work on social awareness [an SEL construct] or any of those.

Other educators responded with generalities about the importance of SEL or more superficial explanations of the concepts. One district administrator noted that educators in their district spoke a lot about "growth mindset," but not the specifics of what it meant. Some educators believed this lack of familiarity with the new nonacademic measures and lack of capacity to interpret them limited use. Contrasting educators' familiarity with using academic data, one district administrator explained:

> Fifty percent of all high schoolers say they don't have a sense of self-efficacy. . . . If you're a high school administrator, you say, "Oh God, what do I need to do?" I can imagine them feeling real pressure to respond and doing something about it. . . . We have a lot of data—we don't quite know how to interpret it, we don't quite know what it means. . . . Because we haven't been practicing teaching self-efficacy in high school, we don't know where to start.

Given the complexity and newness of these survey measures, it is not surprising that few educators were highly knowledgeable about them. Yet even in the later years of implementation we found variation in how educators defined SEL. Conceptions of SEL conveyed in interviews fell into six broad groupings: (1) supporting student mental and emotional well-being, (2) developing social skills and appropriate behavior, (3) creating a safe and supportive school climate, (4) supporting adolescent development, (5) building a culture of inclusion and acceptance of difference, and (6) addressing the needs of the whole child (for more on these conceptions, see Allbright et al., 2019). Also, some educators confused SEL competences (e.g., defining "social awareness" by giving an example that illustrated "self management") or continued to conflate SEL and campus climate, as noted earlier.

A lack of clarity about the meaning of SEL indicators, or the relationships among these different dimensions of SEL and school climate, could present problems for interpreting and acting on SEL indicators. For example,

in one case, district SEL data indicated that self-efficacy was an area of concern—especially for girls. District leaders told us they were responding with a district-wide focus on self-efficacy. However, at a school in this district, when asked what was being done to support SEL, educators spoke nothing about self-efficacy. Instead they told us about referral and suspension data, revealing disproportionality among referrals for Black students, and the subsequent creation of peer-to-peer advisory lessons on respect, a special workshop on study skills and email etiquette, and building a strong culture. While perhaps meaningful, these strategies were not aligned with the SEL competency of self-efficacy. Interpreting SEL in terms of culture or climate could lead to school-level actions that may have little impact on the development of individual-level SEL competencies.

Consistent with the broader DDDM literature, educators' *views about their roles* is another condition that seemed to shape SEL indicator use. One district administrator noted that some principals and teachers consider SEL to be solely a parental responsibility:

> So if you don't have a principal who finds this [SEL] to be important, and I'll be honest with you, I don't think all of our principals are on the same page . . . and not just principals. . . . Actually, more of it is teachers, who think that the work of SEL is not their problem, it's a parent issue. That's not something that they can change . . . It's really the parents have to take care of this.

As a result of these views, this leader and others reported having to "work hard" to convince educators to embrace SEL and SEL data use.

Finally, *disciplinary backgrounds* emerged as another source of variation complicating SEL data use. One administrator reported that having social workers on a district response team kept the focus on relationships and built a stronger understanding of nonacademic indicators:

> [W]e're social workers in education, which isn't the norm. But because of that lens it helps, and we've really helped individuals understand that we're not fluff, that we're critical to the thread of education and that it is dropout prevention. You want students to graduate. We need to build those relationships to understand their needs to reduce the barriers that don't allow them to embrace instruction.

In several other districts, school counselors made sense of SEL data in ways consistent with their backgrounds and training. In one school, both counselors interviewed conveyed a narrow view of SEL as supporting students with mental health issues and "special struggles" like cutting and suicide. In another district, three school administrators consistently

associated behavioral issues with SEL—a pattern aligned with their backgrounds as managers and disciplinary leaders. One can imagine that interpreting SEL as pertaining to relationships (as the social workers did), mental health (as the counselors did), or behavioral problems (as the administrators did) could lead to very different responses to SEL indicators.

DATA PROPERTIES: SEL DATA USE CONDITIONS

Once again, our research in CORE Districts affirmed the importance of data properties. First, *perceived validity* affected educators' motivation to attend to SEL indicators. In our first year of research, administrators in one district questioned whether or not the SEL and CC surveys accurately measured these competencies. One district leader explained, "The issue is a little bit more around the narrow set of questions and whether or not those are the right questions to get at the indicators." As a result of these concerns, school leaders in this district reported that they were not taking action based on the survey results. Leaders in another district believed that the CORE measures did not adequately capture all SEL topics and included additional questions on their surveys to compensate. As noted earlier, the inclusion of SEL survey-based indicators in a formal accountability system also raised red flags for some administrators, who wondered whether pressures to game the system (intentionally reporting positively to inflate numbers) might invalidate the indicators. Some also questioned the validity of survey-based measures because personal issues and biases could color their responses (respondents "might be angry about something" and respond negatively because "this is how I'm going to get the principal fired").

Timeliness of data also contributed to the use or lack of use of SEL data in several cases. Although she found some of the measures useful, a lead administrator for SEL in one district wanted staff surveys to be more frequent so they could guide development of actionable plans throughout the year:

> I would love . . . specifically for the staff piece, to have it done twice a year because it's very difficult to have the survey in February. Results come out in May, and then it's not that continuous cycle of improvement.

Others similarly complained that since the survey results were only released once at the end of the year, they were not useful for making real-time changes during the school year. To compensate, several districts and schools used other data to arrive at more complete or frequent understandings of SEL and climate. One district administered a monthly survey

on school culture and climate to all students and teachers, and discussed the results in staff meetings to track their progress and refine approaches.

Another condition for SEL indicator use appeared to be the *accessibility of the data*. Whereas many districts have been openly sharing academic data for decades, sharing SEL data may present new practical and legal challenges. One district administrator described a two-year process to obtain agreements to share individual student data and implement "restrictions and safety measures" to protect the data. They won approval to openly share the data because leaders made a strong case that "this is important . . . we can't just have anecdotes," and that it would help personnel make sound decisions.

CONCLUSION AND IMPLICATIONS

While the field continues to advocate for greater attention to social–emotional development of students, there remains little guidance on conditions supporting the use of data on these important SEL competencies. This new type of data may be ambiguous, used in an uncertain policy environment, and decoupled from educators' traditional roles. In this article, we drew from sensemaking theory, literature on data-driven decision-making, and experiences of California districts to provide guidance on the use of SEL indicators.

Overall, we conclude that there are many similarities between the conditions supporting academic and SEL data use, but also important nuances unique to SEL indicator usage. Much like academic data use, we find: (1) The accountability policy context can convey a sense of importance, but may also lead to distortive responses; (2) district and school leaders are critical for allocating time and staff, as well as cultivating a data culture; (3) collaboration facilitates sensemaking; (4) individual-level knowledge and beliefs can shape interpretation; and (5) timeliness and perceived relevance of data matter.

Through our research, we also identified conditions uniquely relevant to SEL data usage. First, including SEL indicators in multiple-measure systems can lead to uncertainty and interpretive complexity, and divide educators' attention. Deficit conceptions may also shape sensemaking and are especially germane in the SEL context because of the documented gaps by race/ethnicity on measures of SEL and school CC (Hough et al., 2017; Jain et al., 2015; Marsh et al., 2017). Another condition especially relevant to SEL indicator usage is the lack of coherence or clarity around SEL. The frequent misunderstandings of and disagreement about SEL—sometimes shaped by disciplinary background—could lead to different interpretations and responses. All of these conditions suggest that sensemaking and

response to SEL data indicators are complex processes that require multiple enabling factors.

Given the significant investments in supporting and measuring student social–emotional development, it behooves educators, policymakers, and researchers to think carefully about conditions facilitating and inhibiting productive use of SEL indicators. In what follows, we discuss the implications of our collective findings for three important audiences.

IMPLICATIONS FOR EDUCATORS

Given that higher level policy and organizational contexts may affect SEL data use, administrators should set a clear vision for and carefully craft messages around SEL and SEL indicators. This is especially true where SEL is part of a dashboard or framework that includes multiple measures. Ensuring that educators place value on SEL indicators in addition to academic indicators is an important consideration for leaders if they want deep reflection on the measures, not just compliance-oriented behavior. This might be done through formal board policy, meetings dedicated to SEL indicator analysis, outside partnerships focused on SEL, greater time allocated to SEL initiatives, or the creation of SEL teams.

Second, leaders may want to consider how their community defines and understands SEL, as it can affect what they notice and attend to when examining data and how they respond. If individuals perceive SEL to be broadly about school climate, they might invest time and resources into school-wide programs that enhance trust or relationships. While a worthy cause, these actions may not affect the specific competencies measured by the data, such as self-efficacy or self-management. A move toward greater alignment of SEL competencies, teaching and learning, and data and measurement is critical and one echoed by CASEL's Assessment Work Group (2019). Further, individuals with different experiences and disciplinary backgrounds may come to this process with very different baseline understandings and approaches. Discussions around the meaning of SEL and the specific constructs used in surveys would be an important first step in supporting coherent and productive responses to SEL data (Hamilton & Schwartz, 2019). It may also be prudent to consider the backgrounds of staff members when putting together SEL data teams. Opportunities for peer interaction and support from external partners may assist in interpreting the data and identifying constructive responses.

Third, educators would also be wise to consider how an equity orientation shapes understanding and usage of SEL indicators. Blaming students' SEL competencies on their home lives, socioeconomic status, or neighborhood, as we found in some cases, could hinder productive usage of SEL

indicators. Teachers and school leaders ought to consider this question: How might discourse be shifted to focus on the school's responsibility and individual agency within the school? One option may be to integrate the teaching of individual SEL skills with an explicit focus on contextual factors such as personal identity and equity (Simmons, 2019).

IMPLICATIONS FOR POLICYMAKERS

Our research does not provide definitive direction on how best to treat SEL indicators in broader accountability policy. While adding SEL indicators to publicly available frameworks was meaningful in one district, we also heard concerns about the potential "gaming" of the measures and the added burden and complexity of interpreting multiple measures in many districts. Such concerns mirror the views of some SEL researchers who caution against the inclusion of SEL indicators in public accountability systems (e.g., Duckworth & Yeager, 2015). As such, policymakers should consider the tradeoffs—that while adding SEL indicators to accountability systems could convey the importance of SEL, it may create distortive incentives as well as new challenges for educators with limited time and capacity. Policymakers should also consider the use of SEL data earlier in the year when they may serve as "early warning" of students not on track to reach SEL milestones. As a formative data source, these SEL indicators would not bring associated distortive incentives and would provide educators time to intervene and support such students throughout the year.

Moreover, research indicates that simply supplying data is not going to lead to improvements. Consistent with the academic data literature, we found that for meaningful, authentic SEL indicator use, capacity and collaboration can make the difference. Analyzing and acting upon SEL indicator data takes time, money, and human resources. Policymakers might consider budgets and policies that attend to the human capital needs accompanying SEL data usage.

IMPLICATIONS FOR RESEARCHERS

As noted throughout this article, we found significant conflation of SEL and CC constructs among educators in our case districts. This conflation can be problematic, as individuals could misunderstand an SEL indicator and respond in ways that have little bearing on the competency measured (e.g., launching a climate-building initiative in response to indicators of low self-efficacy). Yet we are also struck by the consistency of this conflation and wonder if in fact it might serve a purpose. Perhaps with educators' busy schedules and multiple priorities, SEL will only "survive" in their lived realities if packaged with other initiatives. This conflation may also

be due to different data users' disciplinary backgrounds, although more research on this association is needed. There is also evidence that some schools adopt a community-minded, collaborative orientation to building SEL (Hoffman, 2009; Kennedy, 2019; Slaten et al., 2015).[4] Future research might examine the relationship between SEL and CC, and the ways in which educators respond to data on both.

Consistent with the evolution of literature on academic data use, the state of knowledge on SEL indicators is at a nascent stage. If SEL measurement and data use become more established in schools, the field would benefit from continued research on not only the supporting conditions we begin to identify herein, but also the outcomes. When educators have these data and are given opportunities to reflect and act on them, what results? Are there particular actions that consistently lead to meaningful improvements in SEL? With this knowledge, we might move closer to achieving the goal of developing students' social–emotional well-being.

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NOTES

1. For more information about CORE's collaboration prior to and during the waiver implementation phase, see Marsh et al. (2016) and Marsh et al. (2017).
2. CORE District leaders helped identify the questions we pursued, and our team conducted the research independently. While PACE staff maintained separate and "on the ground" relationships with CORE leaders in this long-term partnership, we served in a more external research capacity.
3. For more information about specific district decisions related to SEL indicators, see Marsh et al. (2018).
4. There is a documented relationship between measures of SEL and climate–culture measures (Hough et al., 2017).

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