Navigating uncharted territory: Understanding how leaders of minority serving institutions have guided their institutions through the COVID-19 pandemic

Edited by
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Navigating uncharted territory: Understanding how leaders of minority serving institutions have guided their institutions through the COVID-19 pandemic

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Editorial: Navigating uncharted territory: understanding how leaders of minority serving institutions have guided their institutions through the COVID-19 pandemic

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Editorial on the Research Topic
Navigating uncharted territory: understanding how leaders of minority serving institutions have guided their institutions through the COVID-19 pandemic

Robert's story

When the COVID-19 pandemic emerged, many industries were forced to make difficult discussions about protecting the safety of their workers, trying to stay afloat financially, and navigating an uncertain future. Higher education was not immune to these issues and challenges. Most institutions in the US and around the world, except for those already operating in an online format, had to quickly shift to online learning for the safety of students, staff, and faculty. While embracing online technology seemed logical during the pandemic, for many institutions, it came with steep consequences as leaders had to make critical decisions about budgetary priorities and the needs of human capital. To a large extent, Minority Serving Institutions (MSIs) have been particularly vulnerable to the issues described above. It is important to point out that while all MSIs are not the same, generally these institutions have been categorized as lacking resource parity with their predominantly white institutional counterparts but being replete with cultural and social capital. Researchers have credited the latter for helping to facilitate and maximize student learning and development for minoritized students.

As an administrator and faculty member at Howard University, a private, mid-size research Historically Black College and University (HBCU), I saw how the COVID-19 pandemic challenged leaders to make important decisions about protecting the financial health of the institution while prioritizing student learning and avoiding faculty furloughs. When the pandemic brought daily life in society to a complete stop, we were just returning from spring break in March 2020. That Monday, I had planned to go into the office to prepare for my evening class, but normal activities on campus, including the format in which

classes were held, were quickly changed. Instead of teaching in person, university leadership had mandated that all classes be taught online. To accomplish this, they rapidly invested in distance learning technology, provided faculty and some students with laptops, and required all faculty to take classes to become distance learning certified. Given that the university had not budgeted for these items, institutional leaders had to take financial resources from other areas of the institutional budget to account for accommodations. While I was not at the table when these decisions were discussed, I would imagine that they were difficult ones, especially since Howard does not have a large endowment compared to many of its institutional counterparts.

Added to the complexity of the university quickly pivoting to online learning during the semester, I believe the university lost additional revenue by having to return part of students' fees and money paid to live in the residence halls. While these decisions had a critical impact on the operational budget of the institution, the leadership of the institution was able to protect the jobs of faculty and staff and avoid furloughs. I would surmise that federal funding from the CARES ACT as well as additional philanthropic gifts Howard received played a significant role in helping to protect the jobs of faculty and staff. During monthly meetings with administrators at the university, consisting of department chairs and associate deans, the president would join these meetings sometimes and indicate that his goal was not to lay off faculty and staff due to the financial strains of the university. I think he and his leadership team did a good job of navigating the university community through the pandemic.

As the pandemic lingered, and Howard was forced to spend additional semesters operating in an online capacity, students started to complain that they were missing out on the HBCU experience. Some freshmen who started attending school online during the pandemic even pondered attending community colleges to save money. Specifically, they felt that they could receive the same education by completing courses online at a community college as opposed to paying thousands of dollars for tuition for online courses at the University. Moreover, other students, particularly those who identified as lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ), were not excited about the residence halls closing on campus and having to move back home to live and study. Many of these students were able to fully embrace their sexuality while living on campus, but by returning home, they had to compartmentalize their identities once again. In total, I admired the many ways Howard's leadership navigated the pandemic. Administrators in key position at the university were transparent and embraced the notion of collaborative leadership. There was also a strong sense of humanity in the actions by the administrators in that they cared deeply about students, faculty, and staff. I think this sense of care bolstered faculty's morale and reinforced Howard's mantra—"Excellence in Truth and Service."

Terrell's story

In January 2020, I was in Washington, DC attending the Institute for Leadership and Governance sponsored by the Association of Governing Boards (AGB). After a day full of workshops about setting a vision as a university president, steering development of a 5-year strategic plan, and invited talks by sitting presidents and provosts, I retreated to my hotel room in the Hyatt for an evening of relaxation and catching up on email. Curious about what I missed "in the real world" while engrossed in the AGB Institute, I flipped on the nightly news and immediately noticed the scrolling red headline: "Rising number of patients in the U.S. presenting flu-like symptoms". For the next couple of weeks, politicians and pundits made constant reference to "an unknown virus" that seemed to trace its origins back to China but first appeared in the U.S. in Washington State. Fast forward 4 months and I was starting as Associate Provost for Graduate Education, Research, and Innovation at Virginia Union University (VUU)—one of the nation's 101 historically Black colleges and universities (HBCUs) located in Richmond, the Commonwealth of Virginia's capital city. Within a few months of starting at VUU, I was promoted to Provost and Senior Vice President of Academic Affairs and positioned to help lead the campus through the now known virus issuing an existential threat to everyone and every industry: COVID-19.

What has been clear over the past year is the bravery and agility of HBCU leadership. While all institutions of higher education were pressed to close their physical campuses and launch online courses in a matter of weeks, leaders of HBCUs had to make these drastic decisions in the precarious context of drastically reduced state and federal budgets, limited resources, decades of inequitable investments, and serving student groups that are even more vulnerable to the pandemic's shockwaves. For example, I keenly recall phone calls from students and parents pleading for assistance, support, and understanding after unexpected layoffs, record-breaking furloughs, and devastating psychological impacts of losing a loved one due to COVID-19, just to name a few.

HBCU presidents and provosts, like myself, needed to coordinate the immediate switch from face-to-face instruction to virtual learning and extracurricular activities, create a budget-neutral approach to operate, and execute in the midst of the unknown. With their leadership and entrepreneurial spirit, HBCU presidents and provosts ushered in a new era of digital transformation that was arguably years ahead of many other research universities. We innovated–not just in the classroom–but in our core operations, in how people access campus through global entry points, in how bills were paid through e-commerce and crowdfunding options, and in how community is experienced, built, and fashioned even in online, virtual spaces.

In the immediate aftermath of the pandemic, HBCU and predominantly Black institution (PBI) leaders processed what must be done to enact the necessary changes and lead their institutions, like VUU, through a time of uncertainty. HBCU leaders have worked tirelessly to keep their campuses afloat, to ensure business continuity, to keep their staff employed, and, most importantly, to keep their students safe and thriving. By leaders, I'm not limiting the discussion to presidents, provosts, trustees, and cabinet members only. I'm talking about and *intentionally recognizing* the "invisible labor" of frontline workers, campus security, hall directors, student affairs staff, advisors, librarians, counselors, administrative assistants, disability experts, maintenance and

facilities teams, just to name a few. HBCU leaders have demanded emergency funding from the government to help make up for lost revenue, advocated for their students to be included in stimulus payments, and fought for their campuses to gain access to the most up-to-date technology and resources. That fight is *not* new but assumed a new urgency amid the pandemic. And that fight will (and must) continue in today's New Normal. To do anything less would be unfortunate and highly unusual for institutions that have a proven track record for navigating uncharted territories, while forced by society and systemic racism to "do more with less", as too many all-too-often say.

Contents of Research Topic

Research Topics unify some of the most influential researchers, policy analysts, and leading voices around the latest key findings and advances in high-demand areas. *Navigating Uncharted Territory* consists of original research studies and a critical mini-review. One study presents results from an exploratory, qualitative study on distance learning policies and practices using a purposeful sample drawn from five California school districts. Among its many insights, the paper highlights how educational leaders addressed English- and Emergent Bilingual Language Learners' needs during the pandemic (Lavadenz et al.). A second study by Beckmann et al. seeks to understand the relationship between school improvement capacity (SIC) and efforts to sustain teaching, learning, and student wellbeing amid COVID-19 lockdowns, based on qualitative interview data from 13 principals and teach surveys at schools serving disadvantaged communities in Germany. Results suggest that higher SIC led to greater flexibility in finding pragmatic solutions during distance learning.

Protracting the discussion deeper into tertiary and higher education contexts, du Plessis et al. analyzed data from a rapid review of online social media at the start of COVID-19 and an integrated autoethnography project (post-lockdowns) to illuminate sense-making perspectives at a public university in South Africa. Indeed, COVID-19 is a global pandemic and, thus, this issue also includes proceedings of the Brazilian Academy of Dentistry focused on new perspectives and challenges associated with delivering dental education while following public health measures to reduce the spread of COVID-19 in Brazil, India, Portugal, Sweden, and the United States.

Future forward

We're excited about this special issue for several reasons. It provides a much-needed opportunity to dive into the topic of how leaders of MSIs have navigated their institutions through the challenges of the COVID-19 pandemic. This topic is particularly relevant as we continue to grapple with the ongoing, rippling effects of the dueling pandemics—that is, COVID-19 and #BlackLivesMatter—on education, professional fields, and societies at large.

We believe that this special issue will not only shed light on the creative and innovative approaches taken by these formidable leaders, but also provide critical insight and inspiration for other leaders facing similar challenges both now or in the future. Many have noted that COVID-19 highlighted and exacerbated pre-existing inequities in education, particularly for students from marginalized communities. MSIs play a crucial role in addressing these disparities and ensuring that *all students* have access to quality education as/when they need it, regardless of their race/ethnicity, nationality, political affiliation, or zip code. MSIs serve (and have served) a diverse student population, including many first-generation, low-income, economically disadvantaged, and international students.

As such, it is imperative that we understand how MSI leaders navigated the pandemic and the unique challenges they have faced. By sharing their experiences and strategies, along with empirical data and data-based evidence, we can learn from their successes *and struggles* in ways that allow us to work toward a more equitable and just education system. Through these various scholarly perspectives, we hope to present a comprehensive view of the challenges faced by MSI leaders during the pandemic, and the creative solutions they implemented to neutralize threat, preserve safety and security, maintain community, all while ensuring business continuity as way toward long-term sustainability and success. To survive, many had to literally "build the plane, while flying it", as it goes.

In closing, our goal is for this special issue to not only be informative, but also empowering for leaders and educators alike, providing them with tools and ideas to better serve the students and communities they serve. It is our hope that the special issue's insights will help write a new chapter for the future where HBCUs, PBIs, and other MSIs across the globe will be supported to *do more with more.*

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Equity Leadership for English Learners During COVID-19: Early Lessons

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This article provides the findings of an exploratory, qualitative study on distance learning policies and practices from a purposeful sample of five California school districts and 25 district and school leaders with large numbers and/or larger percentages of current or former English Learners. To understand the extent to which leaders address English Learners'/Emergent Bilinguals' (EL/EM) needs during the pandemic, we posed the following research question: What are leaders' local policies and practices in designing and implementing distance learning to promote equity for English Learners? We gathered three key district policy documents across three moments during the pandemic: (1) COVID-19 Operations Written Reports (Spring 2020), (2) School Reopening Plans (Summer 2020), and (3) Learning Continuity and Attendance Plans (Fall 2020). We also conducted interviews and triangulated data sources using grounded theory to analyze and understand how equity is framed and implemented. Data triangulation and iterative rounds of coding allowed us to identify three inter-related findings: (1) leading in the crisis of connectivity and bridging the digital divide; (2) maximizing diverse ELs' learning experiences; and, (3) building from collaborative leadership cultures to collaborative virtual leadership cultures. Using these key findings, we conceptualized the framework for equity leadership for English Learners to address the needs of this underserved population. We conclude with a call for further examination, in both leadership preparation as well as in policy implementation research.

Keywords: educational leadership, equity, COVID-19, English Learners, collaborative culture, equity partnerships

INTRODUCTION

COVID-19, a global pandemic not encountered in almost 100 years, dramatically altered the context of education beginning in March 2020. California Governor Gavin Newsom ordered school closures on March 19th, and educators unexpectedly had to pivot to distance learning for all students. We conducted this study between July and September 2020, a time when the duration of the pandemic and school reopening were still unclear in California. In the midst of this pivot to distance learning were California's 1.1 million English Learners (ELs) for whom in-person language development learning suddenly ceased[1].

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[1]The term "English Learners" is used to refer to students who speak a language other than English who receive specialized instruction in English and, if enrolled in a Bilingual/Dual Language program, also receive instruction in their primary language. The authors acknowledge and encourage the use of the term "Emergent Bilingual Learners" given its focus on the potential to leverage bilingualism as a resource, both cognitively and socially (García, 2009). At present, "English Learners" remains the term used in federal policy, legislation, and court cases and is used in this paper for consistency with federal terminology.

We situate our study within the broader California education policy "ecology" (Weaver-Hightower, 2008) reforms in finance, accountability, and instruction for ELs. The 2013 Local Control Funding Formula (LCFF) and associated Local Control Accountability Plan (LCAP)[2] center equity as a guiding principle to provide additional allocations for increased or improved services for targeted student populations of ELs, low-income students, and foster/homeless youth (Armas et al., 2015; Humphrey et al., 2017; California Education Code, 2018; Lavadenz et al., 2019).

During this same period of finance and accountability reform, California clarified expectations for providing a quality curriculum for the state's ELs. The state's approach rests on critical federal legislation and judicial cases, including Title VI of the Civil Rights Act of 1964, the U.S. Supreme Court unanimous ruling in *Lau v.* Nichols (1974), and the Castañeda (1981) decision which collectively prohibit discrimination and demand access to an effective educational program (Lhamon and Gupta, 2015; Hakuta, 2020).

California state policies stipulate that EL programs must ensure that this group of students: (1) "acquire full proficiency in English as quickly and effectively as possible," and (2) "achieve the same rigorous grade-level academic standards that are expected of all students" within a reasonable amount of time (California Department of Education, 2019). To accomplish these goals, the state requires Local Education Agencies (LEAs) to provide an evidence-based instructional program that incorporates *integrated* English Language Development *(iELD)*, instruction in which the state-adopted ELD standards are used in tandem with the state-adopted academic content standards, and *designated* ELD, *a "protected time" during the day when teachers use ELD standards to "build into and from content instruction."* (California Department of Education, 2014, pp. 108 and 115).

Our study occurs at a time when state policies for iELD and dELD are not fully implemented at the local level (Hopkins, 2016). Additionally, research on school finance policy implementation that provides differentiated and additional funding for ELs has found that the quest for equity for ELs is "still elusive" even after 5 years (Lavadenz et al., 2019). This study concluded that state and local leadership, along with critical stakeholder engagement is critical in achieving equity as one of California's "pillars" of accountability.

Eight years into this significant school finance, accountability, and instructional reform and with the onset of COVID-19, the pivot to distance learning challenges the education system in ways unimagined. To explore how the pandemic impacts one of our most vulnerable student groups, our research team set out to address the following research question: *What are leaders' local policies and practices in designing and implementing distance learning to promote equity for English Learners?* We interviewed superintendents and other leaders from five representative districts across the state for a total of 25 district- and site-level

leaders. Additionally, we analyzed three sets of COVID policy documents – the COVID-19 Operations Written Report, School Reopening Plans, and the Learning Continuity and Attendance Plans (LCPs) – to understand how equity is framed and implemented during the pandemic. To inform our discussion on equity leadership for English Learners, we begin with a review of the research literature on supports for effective education for English Learners, educational leadership, and the intersection of race, culture and ethnicity. We follow with a summary of three key findings from the interviews and document review from which we derive emergent themes. We then discuss these themes and propose a framework of equity leadership for English Learners.

LITERATURE REVIEW

"It turns out that leadership not only matters; it is second only to teaching among school-related factors in its impact on student learning…" Wallace Foundation in Leithwood et al. (2004) *How Leadership Influences Student Learning: Review of Research (p. 3).*

If leadership matters, then it is important to consider what comprises effective education for ELs, educational leadership in general, and the intersection of culture, race and ethnicity with leadership. We begin with a summary of key research on the connections between effective education for English Learners and the important roles leaders play in supporting teachers and families of English Learners.

Supporting Effective Education for English Learners: Leadership Matters

Drawing from the extant literature on evidence-based and effective practices for English Learners, Santos and Hopkins (2020) signal the importance of developing educator capacity with systems-level design and collaboration as central to supporting English Learners. Developing local policies that include constituent perspectives, goal setting, and action planning through cycles of examination to understand the impacts of these actions should also address the distinct needs of specialized needs of distinct groups of EL students, including newcomers, students classified as ELs who have been in the United States 3 years or less (Every Student Succeeds Act (ESSA), 2015). Thus, effective leaders enact leadership as widely distributed throughout the system, based on a shared vision and coherence (Scheurich and Skrla, 2003; Honig, 2006; Hopkins, 2016) and lead the focus on equity for ELs throughout the system.

Local policy-making as a leadership practice is central to EL success; this includes the articulation of a comprehensive English Language Development program (Gándara and Orfield, 2010). EL programmatic policies include providing professional learning opportunities to enhance expertise for teachers of ELs, to build teachers' knowledge about the curriculum and school context, to engage in inquiry about their own practice, and to deepen subject and linguistic knowledge for teaching ELs (Goldenberg, 2008; Scanlan and López, 2014; Faltis and Valdés, 2016; National Academies of Sciences Engineering and Medicine, 2017). The genesis for effective

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[2]The LCAP is a 3-year plan that describes district/school goals, actions, services, and expenditures to support positive student outcomes that address local needs and California's Eight Priorities related to academic performance, including EL progress in learning English, academic engagement, and school conditions and climate. Source: https://www.cde.ca.gov/re/lc/.

curriculum and instruction for ELs stems from an assets-orientation and fosters positive relationships with students (López et al., 2020) simultaneously responding to the development of linguistic and academic content knowledge and skills to high analytic levels that prepare students for success in college and career (Saunders et al., 2013; Umansky et al., 2020). Professional learning for teachers of ELs (López, 2017) engages them and their leaders in inquiry cycles about their own practices as part of continuous improvement (Mavrogordato and White, 2020).

Effective leaders of ELs also commit to family and community engagement through policies, programming, and their own practices, and build trust with typically marginalized communities (Bryk and Schneider, 2002; Mapp and Bergman, 2019). They consistently analyze, and modify their beliefs and practices (Lucas et al., 2018) specific to school contexts and lead the creation of established process and organizational conditions that produce policy and program goals intended to impact capacity outcomes. Next, we turn to the literature on the evolution of views of educational leadership and how perspectives of education leadership inform our study.

Views of Educational Leadership

[S]ystemic, historical, and sociopolitical roots of inequities; the conception of leadership as enacted through community; and the focus on building coalitions with people and organizations across the community all have implications far beyond the school walls.

Galloway and Ishimaru (2017, p. 27)

Reviews of leadership theories and conceptualizations of leadership have evolved from the mid-20th century to contemporary times, and reveal models of distributed leadership, instructional leadership, teacher leadership, and transformational leadership (Goddard and Miller, 2010; Gumus et al., 2018). According to Lambert et al. (2016) more contemporary views of leadership have evolved to include notions of "transformational leadership (TL) [which] is not about the behaviors (traits) of a charismatic individual but about the practices that are distributed collaboratively among staff members. Relationships are interdependent and involve parents, community members and professional staff. The idea that leadership emanates from a single leader has receded as a dominant concept" (p. 9). As implied by this definition, views of educational leadership evolved from a single authority who "shared" or distributed leadership/authority/power with others, to leaders who support and collaborate with teachers, parents and community members to maximize their equity practices and partnerships (Clark-Louque et al., 2019). Building from Burns' 1978 seminal work on transforming leaders that focused on improving organizational qualities and effectiveness, Shields' (2010) study of transformative leadership challenges inappropriate uses of power and privilege that create or perpetuate inequity and injustice. Shields proposes that unlike organizationally focused transformational leaders, transformative leaders actively and purposefully attend to the broader social, political, and structural inequalities faced by marginalized student populations in order to create better schooling conditions for underserved students.

To further address the focus on marginalized and underserved student populations, educational leadership conceptualizations and theories have begun to address equity as a core principle in leadership policies, practices, and competencies. Galloway and Ishimaru's (2017) study of equitable leadership, for example, notes that "only 6% of school superintendents and 20% of principals are people of color" (p. 7). Their study, in which over half of the 40 participants self-identified as people of color, charts out 10-high leverage practices for equity leadership; they underscore personal and collective inquiry around issues of identity, values, biases, assumptions, and privileges within themselves and systemically, and the importance of modeling and risk-taking to challenge inequities. Equitable school leaders, they contend, insist on excellence and engage with families as partners to create school and district cultures through the equitable allocation of resources and systemic improvement. The dynamic nature of schools and our students also requires leaders to support teachers' practices through *culturally sustaining pedagogies* embedded into professional learning systems (Paris and Alim, 2014). These practices and policies for professional learning "seek to perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of the democratic project of schooling" (p. 88). The large percentage of leaders of color in Galloway and Ishimaru's identification of practices for equity leadership raises the issue of intersectionality between leadership and culture, race, and ethnicity reviewed below.

The Intersection of Culture, Race, and Ethnicity in Equity Educational Leadership

Building from a more extensive and substantive body of work of scholars such as Ladson-Billings (1995) and Gay (2002), among others who conceptualize the need for teachers to respond to culturally and linguistically diverse students, Khalifa et al. (2016) propose a culturally responsive school leadership (CRSL) framework, consisting of four strands: critical self-awareness, CRSL and teacher preparation, CRSL and school environments, and CRSL and community advocacy. He synthesized the research literature on the types of teaching and leadership required for the schooling needs of underserved student populations to encourage the expansion of transformational leadership approaches to close achievement gaps; leaders must clearly understand their role in addressing students' culture and their school culture. The unique contributions and perspectives of leaders of color require further research, as Guinier and Torres (2002) cited in Santamaría and Santamaría (2012) conclude: "there is scant literature available identifying and celebrating the positive attributes of education leaders from historically oppressed groups and those who identify with them, and ways in which these individuals acquire mainstream institutional access to create real change" (p. 7). Few studies emphasize the role, abilities and impact of education leaders of color, and the corresponding relationship between leaders of color in supporting teachers and marginalized student populations (Franco et al., 2013). As a bridge within the equity leadership research gap, Santamaría (2014) applied Critical Race theory and critical multiculturalism to study how leaders of color who practice transformative leadership to promote more

socially just and equitable student outcomes can guide teachers on how to ensure equity in resources and practices. She contends that leaders of color "are less focused on looking good and more focused on doing good" (p. 357). As we next describe in the methods section below, the sampling procedures in our study were not purposely aimed to the selection of leaders of color. Nevertheless, the actions and practices that ensued due to the intersectionality of leaders' cultural, linguistic, racial and/or ethnic identities informs our approach to interrogating equitable leadership practices and policies of the leaders in our study as we return to the instantiations of equitable leadership for ELs during the pandemic, particularly in light of the superintendents and other leaders of color in our study.

METHODS

We employed an exploratory qualitative phenomenological case study design (Yin, 2018) to document and understand school and district leaders' policies and practices regarding the education of ELs during the pandemic. English Learners in California public schools total nearly 1.1 million students, the largest number of any state, and represent 18.63% of enrollment (Data Quest, 2020). This investigation "explores a real-life… multiple bounded system (cases) over time, through detailed, in-depth data collection involving multiple sources of information… [to] report a case description and case themes" (Creswell, 2013, p. 97). We delimited the case to include a two-tiered purposive sample of districts and leaders engaged in delivering distance learning to high numbers or high percentages of English Learners during COVID-19. We used grounded theory (Corbin and Strauss, 2008) to identify a set of interrelated categories and applied deductive and inductive processes to interpret and conceptualize data. These cycles of grounded theoretical approaches resulted in the key findings that allowed us to answer our research question to generate a substantive theory of leadership for equity for ELs during COVID-19 from those findings. This framework may be applied in diverse contexts and replicated in other studies.

Sampling Approach

We selected the districts in this study using a two-tiered purposive sampling method consisting of a network approach to initially select sample districts and their superintendents, followed by a snowball sampling approach wherein selected superintendents identified leaders within each district (Merriam, 2009; Timonen et al., 2018; Merriam and Grenier, 2019). Network sampling refers to the selection of study participants based on a predetermined selection criterion in order to study a sub-population of interest thoroughly. We established the following selection criteria to identify five sample districts in California:

- Enrollment of high numbers or high percentages of current or former English Learners
- Geographic representation across the state and urban, suburban, and rural locations
- Superintendent as a proven leader of linguistically and culturally diverse school districts as evidenced by:
  - Recognition of excellence in leadership through peer nomination for participation in statewide leadership networks or organizations
  - Recognition of excellence in leadership by regional organizations.

Superintendents from the purposively selected school districts subsequently nominated key district- and site-level leaders for participation based on their expertise and knowledge in leadership, teaching, and learning for diverse student populations. Participants (n = 25) represent a variety of role types and school levels. **Table 1** provides an overview of district demographics. Our sample consists of five districts altogether— one from a large urban city, three from large suburbs, and one from a rural mid-size city. The percent of Ever-English Learners[3] across districts ranged from 25.8% to 67.4%. We interviewed

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[3]In California, the term "Ever English Learners" refers to the aggregate student group comprised of those who are current EL students plus Reclassified Fluent Proficient English Learner (RFEP) students who have met English proficiency and academic criteria to exit English Learner status.

TABLE 1 | District demographics, interview participants, and district-level policy documents.

District*	Grade span	Student population	English Learners N (%)	Ever English Learners** N (%)	Locale***	Geographic location in California	N Interviews		N Documents		
							District leads	School leads	COVID-19 operations report	Reopening plan	Learning continuity plan
Marina	K-12	7,729	1,880 (24.3%)	3,799 (49.1%)	Suburb, large	Southern	3	3	1	1	1
Ocean	K-8	30,793	8,110 (26.3%)	12,073 (39.2%)	Urban, large	Central	2	2	1	N/A	1
Reef	K-12	9,321	1,067 (11.4%)	2,402 (25.8%)	Suburb, large	Northern	2	2	1	1	1
Sand	K-8	6,131	3,240 (52.9%)	4,135 (67.4%)	Suburb, large	Southern	3	2	1	1	1
Shell	7–12	11,653	1,323 (11.4%)	3,938 (33.8%)	City, midsize	Southern	3	3	N/A	1	1
Totals							13	12	4	4	5

Source: http:www.ed-data.org.
*Pseudonyms are used here to protect the identity of district personnel who participated in this study.
**Source: California Department of Education Dataquest (2019–2020). The term Ever English Learners refers to the aggregate number/percentage of students who are either current or former English Learners (Reclassified Fluent English Proficient).
***Source: National Center for Education Statistics (2020).

thirteen district-level leaders and twelve school leaders. Twenty out of the twenty-five participants are leaders of color. We use pseudonyms to protect confidentiality and anonymity of the participants and their districts. Additional demographic information is provided in **Supplementary Table 1**.

Data Collection

Data collection occurred over a 3-month period following the onset of the pandemic between July and September 2020. Data sources included interviews and local policy documents relevant to this study. We employed data triangulation process across multiple sources to counter threats to trustworthiness, such as reactivity, researcher bias, and respondent bias (Denzin, 1989).

Interviews

We conducted individual virtual semi-structured interviews with each of 25 district and school leaders. The research team recorded and transcribed all interviews via Zoom. Each of the interviews was approximately 45 to 60 min. Across the five districts, we interviewed a total of 13 district-level administrators serving as superintendents, assistant superintendents, and director/coordinator of English Learner services, and 12 school-level administrators serving as principals. We developed the Leadership for English Learners during COVID-19 Semi-Structured Interview Protocol (see Document 1 in **Supplementary Materials**) to understand the policies and practices that supported ELs during COVID-19 school closures. This protocol standardizes a purpose statement and a total of nine interview questions for all respondents. The nine questions are organized into three sections, namely: (1) roles and responsibilities transitions, (2) family partnerships and support, and (3) advice to other educators. We also included a question to check for generalizability.

Documents

In addition to collecting interview data, we obtained several local policy documents for each participant district: (1) COVID-19 Operations Written Reports, (2) Reopening Plans, and (3) Learning Continuity and Attendance Plans (LCPs). We intentionally selected these documents because their completion and publication were either strongly recommended or mandated by the California Department of Education to hold districts accountable for continued teaching and learning during the COVID-19 school closures. These accountability policies were intended to ensure that Local Education Agencies (LEAs) operate safely, collaborate with their bargaining units, offer quality distance learning opportunities, and maintain communication with the families they serve. **Supplementary Table 2** provides background information on each of these documents.

Data Analytic Procedures

We used the constant comparative method (Hutchinson, 2001) to conduct three rounds of coding of the interview transcripts. We started with *a priori* coding based on educational leadership and effective practices for ELs literature described in the literature review (e.g., Scheurich and Skrla, 2003; Mapp and Bergman, 2019; Santos and Hopkins, 2020). These were broad in nature

(e.g., policy, practices, etc.). We then identified specific emergent codes—created from the examples of policies and practices that were used by school leaders in their response to the COVID-19 school closures (e.g., collaboration, decision-making) and then returned to the interview transcripts to apply these emergent codes in what was our second round of coding. Once complete, we conducted a third round of coding to both validate the emergent coding already conducted and to look for any nuances among them that could result in potential new codes. This led to the development of new emergent codes (e.g., changing/flexibility in job description, specialized instruction for ELs) which we operationalized and applied to all of the interview transcripts (see **Supplementary Table 3** for our Code Book). Our final step was to conduct several rounds of data validation to ensure that the final codes were applied as defined in our codebook for both *a priori* and emergent codes.

To analyze district policy documents, we used cycles of grounded analytic approaches (Charmaz, 2006) to identify emergent themes across districts; we repeated this approach for each type of policy document (e.g., themes in districts' reopening plans, themes in districts' COVID-19 operations written reports, etc.). We then created district-level qualitative memos for each district which summarized their policy documents and coded interview data as part of our data reduction and analysis processes. To triangulate our data within and across districts, we clustered codes into substantive categories and then compared these category codes across interview transcripts and documents. The iterative processes in our grounded theory approach allowed us to refine ideas, identify conceptual boundaries, and to confirm the "fit" and relevance of conceptual elements (Charmaz, 2006) to generate a consistent picture of how leaders developed and actualized equity policies and practices for ELs. Engaging in these analytic procedures allowed for our conceptualization of an Equity Leadership for English Learners Framework. We first present the results of our analyses and then describe how those findings informed the development of the Equity Leadership for English Learners Framework.

RESULTS

Interviews with 25 leaders and analysis of relevant policy documents across the five districts allowed us to respond to the research question: *What are leaders' local policies and practices in designing and implementing distance learning to promote equity for English Learners?* It is important to note that all of those interviewed addressed the food and housing insecurities that vulnerable communities in their districts faced, as emphasized in a recent Phi Delta Kappan article, *"[f]or most school superintendents, COVID-19 has been the biggest professional challenge of their careers…. The moment has come not just to take half-steps toward equity in K-12 education but to take a real stand for it"* (Starr, 2020). We present the findings on leadership thematically based on the interrelated policies and practices designed by these leaders to implement equitable distance learning for ELs in their schools and districts. The three sets of policy documents (the COVID-19 Written Operations Reports,

Reopening Plans, and Learning Continuity and Attendance Plans) and the interviews temporally coincided with the onset of the pandemic, with the immediate and urgent need and struggle for devices and connectivity, the planning processes for online and/or hybrid teaching, and the implementation of those plans in preparation for the fall launch of the school year. Using grounded theory as the analytic approach, we strove to first learn what leaders did during the initial months of the COVID-19 crises and then to identify emerging themes that inform our understanding of equitable leadership. Multiple cycles of coding, memo-writing and interpretation allowed us to identify key actions of this set of predominantly leaders of color to show the "what" of leadership, while illustrating the "how" to help us find the meaning of these actions. We describe "what" policies and actions were taken to meet ELs' needs in this section. The discussion section that follows completes the iterative cycles of grounded theory to generate the framework for equity leadership for ELs.

Our analysis indicated that, from the onset, leaders' heightened sense of already existing inequities that would be worsened by the pandemic was evident; their actions, revealed through written policies and interviews, centered on three overarching findings: (1) leading in the crisis of connectivity by accelerating outreach to the most vulnerable families and students; (2) maximizing diverse ELs' learning experiences; and, (3) building from collaborative leadership cultures to collaborative virtual leadership cultures.

Finding 1: Leading in the Crisis of Connectivity by Accelerating Outreach to the Most Vulnerable Families and Students

As the principal of one elementary school in the Ocean School District noted: "*Our model here…is that when [family members] call on the phone, we take care of it that minute. If we have to go to your house, we're going to have come out with our protective gear and we're going to walk you through it. Make sure you're logged on and ready to go before we walk away from your home.*" As districts across the state and nation acted to ensure access to internet connectivity and to secure digital learning tools for students, families, and teachers, the leaders in our study recognized and prioritized those most in need in their communities. As such, every district in our study recognized that additional outreach and support was needed for families of ELs to ensure they had devices and internet connectivity for online learning. At the onset, all staff, regardless of role-type or job description, was deployed to contact students and families disengaged from or unable to connect to distance learning.

The stories shared, particularly by school principals across the five districts, reflected their dedication to doing "whatever it takes" to meet their students families' connectivity needs, as reflected by the principal from Sand: "*I've had my attendance clerk face timing with parents to show them where to turn on their device, where to click. We're emailing them, we're texting them. Really doing as much outreach as we possibly can.*" The Director of EL Services and Categorical Programs in Marina School District represents an educator whose leadership for

ELs began in the classroom (Russell and Von Esch, 2018). She has consistently built trust and provided EL expertise to her colleagues and administrators and during distance learning she has aligned structural and instructional practices to provide equitable learning opportunities for ELs and their families. She immediately recognized the need to differentiate services and support for this vulnerable population and indicates, "*There was no way that we could just hand newcomers a packet and expect for them to access their learning that way. So those were the first families that we reached out to and said, "Do you have a device? Can you get online? And this is how we're going to help because we really needed to make sure they had access to their teacher.*" District leadership also demonstrated keen awareness and proactive interactions with families of multiple language backgrounds.

Finding 2: Maximizing Diverse English Learners' Distance Learning Experiences

Spring learning efforts began with a frenzy to get materials to students, and leaders worked through the summer to retool education. The following excerpt from our interview with the EL coordinator at Shell paints the picture of a massive effort to create paper packets for students. She states, "*Directors were creating the lesson plan templates for content area with instructions for the parents in multiple languages and one of the coordinators and I were tearing apart books and scanning them in. We made sure that the very next week, our students had something to work on at home.*" Opportunities for differentiation and evidence-based instructional practices for English language development were folded into plans for synchronous and asynchronous instruction. Examples from districts' local documents represent current practices for ELs: "Language scaffolds for ELs will be delivered during synchronous instruction…differentiated assignments will be provided during asynchronous time blocks." Just as all districts' plans for implementing distance learning were phased in, plans for returning to in-person instruction were also phased; the first to return according to their plans were students with exceptional needs and in most cases, this included ELs and signaled practices such as: "Pedagogical practices like SDAIE (Specially Designed Academic Instruction in English) for students in all grade levels and content areas will support synchronous and asynchronous instruction."

Districts' Reopening Plans needed to project for the unknowns in regards to whether the small cohort model would include the return of English Learner students, specifically that this model would target: "English Language Proficiency Assessments for California (ELPAC) Level 1 and 2 students, all long term English Learners and students at risk of becoming long term English Learners." Similarly, another district's plan specified, "We anticipate six small cohorts to be the first to return. We anticipate the total number of students will be 114 including newcomers."

All districts described efforts to augment services and supports for ELs including positioning additional staff to work directly with students, tutoring, targeted professional learning for teachers and support for staff, and technology support for parents. In one district, "a summer school program was

specifically designed to address the learning needs of newcomer English Learners." Another district planned to offer, "additional supports using *Imagine Learning*[4] in addition to the integrated ELD instruction that students receive." Four out of five districts included processes to identify and continuously monitor the language proficiency of ELs. These districts detailed plans for using state and/or local assessment data to plan intervention including small group instruction, tutoring, and intensive support beyond the regular school day. The following excerpts from districts' local policy documents support this finding:

- *Wonders* ELA/ELD curriculum-based assessment data will be reviewed
- School staff will continue to monitor all ELs needing extra support through quarterly monitoring using *ELlevation*
- Students unable to complete the summative ELPAC from 2019 to 2020 will complete the test by the end of October
- Online diagnostic/formative assessments

Finding 3: Building From Collaborative Cultures to Collaborative Digital Leadership

"*It was crisis management for the first 3 months…to support basic needs—food distribution, computers, internet.*"

Each district included a number of distinct collaborative efforts that preceded the pandemic; these district and school-level structures included a variety of long-standing commitments to ELs, including language development and content area curricular reforms. Differentiated staffing practices originally in place prior to the pandemic allowed staff to continue their work virtually and in other ways to support EL students. As one high school principal states, "*…One of the things we wanted to continue… is the bilingual instructional assistants, [especially] for our [beginning level] ELs…and to make sure that the bilingual instructional assistant also had that access.*" A superintendent comments about the district's work over the summer months:

By May and June and July, we were busy trying to make sense of it all. So that was the planning, creating task forces, creating curriculum committees. I'm happy to start planning because I realized, whether or not we would end up in person, we were going to end up … in distance learning again completely. So, we started planning for that; that was the right choice. We were one of the first districts to say that we were going to start distance learning only. And so that helped reassure teachers, too.

Districts' policy documents also identified the transition from existing teams, or collaborative structures to cross-divisional committees and teams as this representative example from one district's LCP plan reflects:

The district's English Learner Instructional Specialist Team worked with the districts' Curriculum Team to develop high-quality resources to support ELD instruction during distance learning.

An elementary principal describes how multi-role teams worked together in the early phase of the pandemic:

I actually have a team that I put together…a campus supervisor, a behavior intervention specialist, a secretary, attendance clerk, a librarian, and a family and community engagement coordinator…We go out in the community after we make our calls…maybe about 10:30 am…to take out devices. ... Oh…when I think of the people that are supporting all of the technology!

All districts described similar immediate efforts to pivot students to distance learning by providing rich examples of collaborative efforts that highlighted their flexibility to take on additional or altogether different job roles to transition and support students and teachers into remote learning.

There were numerous other policies we uncovered that were unique to each school district and were testaments of district and school leaders' commitment to all students and to equitable service for those most affected by the pandemic. These policies and practices were unique in that they were customized for their respective communities. **Table 2** exhibits policies and practices that, based on the data collected, were unique to each district.

These findings compelled us to further engage with the data to then examine the relationships between and among the key findings (Timonen et al., 2018). We returned to the district-level memos to re-interpret and conceptualize the ways in which our participants' leadership policies and practices responded to ELs during the pandemic (Kolb, 2012). The final iteration of our grounded theory approach is presented in the discussion section that follows. This iteration allows us to further interpret the findings in order "to gain a better understanding of the characteristics (properties) and possible variation (dimensions) of categories and concepts that are emerging in the data"

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[4]Imagine Learning, Wonders and Elevation are all commercially published curricular resources that support English Learner language and content learning.

TABLE 2 | Policies/practices unique to individual school districts.

District	Unique policy/practices
Marina	The district's Parent Advisory Committee Plus (PAC+) met virtually to review and provide input and feedback on the COVID-19 operations report during development.
Ocean	In a survey of teachers, just over 20% of teachers reported being very skilled/confident with teaching virtually. The district allocated three additional days for staff training to address this need at a cost of over $2.6 million.
Reef	A social emotional learning planning team was established consisting of a subcommittee of teachers, counselors, social workers, and health personnel that focused on lesson development for elementary and secondary as well as a universal social emotional screener to assess student need at the start of the 2020–2021 school year.
Sand	The district's goal was to ensure continuity for transitioning students into virtual learning and back to in-person learning. With that aim, the district's teaching and support staff shared practices during professional development to continue to incorporate SEAL, SDAIE strategies for English Learners in all grade levels and content areas through online instruction.
Shell	The district instituted a four-tiered intervention and support plan for 2020–2021 starting with (1) universal screening in Math and ELA for all students, (2) student support teams for students failing two or more classes, (3) subject specific support from 4 to 6 pm, Monday–Thursday, and (4) access to free and unlimited tutoring in real-time contracted by the district.

EQUITY LEADERSHIP FOR ENGLISH LEARNERS FRAMEWORK

FIGURE 1 | Equity leadership for English Learners framework.

(Timonen et al., 2018 p. 8). As a result of these grounded analytic processes, we propose equity leadership for ELs as both theoretical and practical insights into the intensity and extensiveness of leaders' actions that inform the six themes described in the discussion section.

DISCUSSION: EQUITY LEADERSHIP FOR ENGLISH LEARNERS

We conceive equity as comprised of a set of inter-related concepts to address deficit notions of the resources of Communities of Color that have fueled intolerance, bigotry, and assimilation throughout the history of United States public education and which are ingrained in social institutions (Valencia, 2010). Thus, we define equity leadership as two dimensional: 1)

equity is the <u>acknowledgment</u> of inequities, lack of access, resources, opportunities, and academic and linguistic outcomes; and 2) equity is <u>actualize</u>d through agency (individual and collective actions) to counter injustice and oppression, including differentiation and the distribution of resources based on the needs of those who have been historically marginalized and oppressed. Equity is achieved when outcomes change.

Across all of our districts, our analysis of site and district leaders' descriptions and evidence from local policy documents, led to the identification of six interrelated themes that are constructed from the findings: (1) Personal and Collective Commitment; (2) Pedagogies of Equity; (3) Professional Development; (4) Families as Leaders and Partners; (5) Equity Partners; and (6) Differentiated Resources. In what follows, we present these six themes accompanied by representative quotes. Based on our discussion of these six interrelated themes, we

then conceptualize a framework for equity leadership for English Learners (see **Figure 1**).

Personal and Collective Commitment

"Less of me and. . . more of all hands on deck. . . ."

Although not originally identified as one of the selection criteria, 20 out of 25 participants in our study were leaders of color, and their perspectives and actions in creating local policies, including supporting teachers of ELs and other marginalized groups in their districts and communities reflected their equity vision; their actions could be assessed as culturally responsive and sustaining (Franco et al., 2013; Paris and Alim, 2014; Santamaría, 2014). Their personal leadership style, words, and behaviors reflect their commitment to equity and guided what Rimmer (2016) describes the essential work of equity leaders. Their personal investments of time were also reflected in their actions as leaders as one superintendent reflects, *"Why?. . . because this is one-on-one [for students, staff, and families]. . . A high school principal extends, "I ended up reaching out to the teachers and say, "You only have 35 kids in your second period, I need to call every single one of them." I created a Google Sheet in Google Drive that all the teachers had access to and all of the students' information was there, like the name and phone numbers."*

All district-level leadership recognized the importance of building and hiring other district-level leaders with English Learner expertise in a role designated as such, as well as English Learner experts at the site-level to support ELs and their teachers.

All of our participants shifted to distance learning after having built a strong collaborative foundation and equity-focused foundation in their districts. As the Superintendent of Ocean District observed, *"In terms of our equity-based support model, all those major guiding principles, components, have been built by everyone, everybody on the team. Nothing was really built by me. . .I just facilitated the new structure."* According to Marina's Assistant Superintendent the pandemic brought *"[even] more of a collaborative manner. . .the school re-imagination team (has)parents and students. . .to really hear their perspective. . .and having the teachers' union be an early [participant]."*

Reflecting on his experience during COVID-19, one high school principal in Marina School District shared,

I think the part that makes me happy right now is the kids are talking. So, I think that's a credit to the teachers because they're trying to get the students to participate. I think it's a credit to the parents because they want their kids to participate, even though they're stressed out to the max about how is my kid going to learn? How am I going to go to work and make sure that my kid is learning? And I think that's a credit to the district that has such [a] great support network. That's not accidental. I don't think anything that's happening is by accident. The system was built to support it.

Pedagogies of Equity

"[Keeping] English Learners in mind is keeping them in the center. . . . that has been our pedagogy."

The foundation for effective curriculum and instruction for ELs includes the development of both linguistic and academic

content knowledge and skills to a high analytic level that prepares students for success in college and career (Saunders et al., 2013; Umansky et al., 2020). Interviews across all districts described purposeful efforts during distance learning with the goal of ensuring that ELs continued to have access to rigorous curriculum. Leaders advocated for three essential strategies: (1) sustaining the use of the adopted curriculum, (2) continuing designated and integrated English Language Development, and (3) increasing or improving services to support ELs. Analysis of the interviews provides an understanding of administrators' thinking and reasoning regarding how to achieve this equity goal for ELs even during the crisis presented by COVID-19.

Sustaining the Use of Adopted Standards-Based Curriculum Through Online Learning Platforms

"Teachers are still using the curriculum as they normally would. But now they're using more of the digital formats."

District leaders reported that teacher leaders and specialists supported their colleagues to continue the use of the adopted standards-based curriculum while adapting instructional strategies to the online/distance learning platform(s). The Reef School District COVID-19 Operations Report included an example of this: "EL Coaches and EL Mentors support teachers to scaffold lessons utilizing best practices for English Language Development (ELD)." The Sand School District superintendent noted a question raised during planning for online instruction, *"How can we be more engaging using the different kinds of digital resources that we have?"* Discussing instructional strategies, an elementary principal in Marina School District noted, *"Before it was just the highlighter. . .But now, they're. . .trying to do that in the digital formats."* A rigorous curriculum plus digital tools was only the first step in these exemplary districts' efforts. Equally important was ensuring that EL students participated in a rigorous English Language Development program.

Differentiated English Language Development for Diverse English Learners

"And when we designed our curriculum during the summer we built in the different question and language stems that they would need for each unit at the different levels of language proficiency."

Study districts all implemented a comprehensive ELD program as a matter of local policy (Gándara and Orfield, 2010), consisting of both designated and integrated ELD through the schedule, the curriculum, and the initiatives dedicated to meeting the specialized needs of ELs such as newcomer students, long term ELs, and ELs in dual language programs. Ocean School District provided dELD through both synchronous and asynchronous instruction and monitored the balance between the two, as noted by the EL coordinator *". . . [ELD] can't be more asynchronous than synchronous. I actually checked those schedules."* The LCP from Marina School District identified scheduled times for elementary students outside of the regular school times for dELD, *". . .dedicated blocks of time in the morning and afternoon will be used for designated ELD and support for students with disabilities"* which allowed students

with intersectional needs to receive online instruction in both areas. After this initial implementation, their innovative schedule was highlighted in a national webinar on distance learning.

Beyond scheduling, leaders developed instructional resources for dELD. In Sand School District the EL coordinator supported the asynchronous lessons noting, *"So teachers are provided with the introductory lessons for each cognitive skill with a zoom video that they could assign to students asynchronously."* The Marina School District EL coordinator met the challenge of providing sufficient opportunities for ELs to speak during dELD indicating, *". . .the teachers utilized Google slides to embed some language frames. . .and then embed links. . .where the students would record their oral rehearsal."* Schoolwide implementation of EL strategies for all students ensured lessons were comprehensible for EL during iELD. School site-level leaders and EL Coordinators across districts indicated their focus on ELs as they observed, *"We have almost 46 to 47% ELs here on our campus [in Ocean]. So, everything we do is always with the emphasis and reflection and thought process of ELs."*

District leaders also recognized the specialized needs of three distinct groups of EL students: newcomers, students classified as ELs who have been in the United States 3 years or less (Every Student Succeeds Act (ESSA), 2015), long term ELs (LTELs), students who have been enrolled in a United States school for 6 years or more and have not been reclassified as fluent English proficient (Olsen, 2014); and ELs in Dual Language programs. The Shell School District LCP documented that ". . .designated supports for Long Term English Learners. . .are also being offered to address academic language acquisition." According to the superintendent, "These supports included digital resources that came with the curriculum that we had already adopted, but we hadn't purchased in the past. . .It has the English Learner supports already embedded [and] an additional system online." ELs in Dual Language (DL) immersion programs, and even these programs themselves, also needed support. The Sand School District EL coordinator noted, *"Site leadership needed reassurance that Dual Language CAN BE done in virtual spaces."*

Expanding Services and Supports

"The theme [in our district] right now for this new phase is support for success. Multiply that by 100 when it comes to our most vulnerable students, and by that, ELs, of course."

Districts ensured that EL students had access to devices, internet connectivity, and head phones as described by the Ocean School District LCP so ". . .English Language Learners will have increased access to. . .early language literacy development, and be able to. . .engage in discussions to acquire language skills." We found that district leaders actively leveraged the crisis to increase services for ELs. As the Shell School District superintendent observed, *"I think that the COVID-19 exposed a number of gaps that we have within our educational system, not only in our district. . .. Many of our parents might be able to hire tutors. . .but specifically our English Learners don't have those additional supports. . .."* Districts used this emergency to address many of these inequities impacting ELs. Some districts purchased additional online components of their adopted curriculum

as seen above. In their Operations Report, Ocean reported ". . .access to Spanish materials to ensure EL students identified as Emergent received the supports to access content during the COVID-19 closure." The Reef LCP increased support noting, "Further, the student services department will be working with classified staff members to ensure that our low-income students, foster students, and English Learners are aware of and participate in academic and social emotional support. . .." The EL Coordinator in Shell observed, *"This year, in the middle of a pandemic, we rolled out our first time in the district universal screening."* Districts hired additional bilingual instructional aides and arranged for afterschool tutoring, homework help and summer school for newcomers.

Significantly, leaders recognized the need for ELs, especially newcomers, to return to in-person instruction as soon as possible. The superintendent of Sand School District stated, *"There are some students that I want to bring back. . .. They are newcomers who can't. . .understand, and especially [if they speak] languages other than Spanish. They have the hardest time because they can't access, they need reality, they need total physical response, they need to see. And so, they need to come in."*

Districts planned and implemented learning hubs – small groups of students with specialized needs who come to school before the schools are opened to all students. In Shell School District, the EL coordinator observed, *"One of our next steps is to provide our ELs. . .whether they're newcomers or Long term, it doesn't matter. We're going to start with a small cohort."*

Throughout the COVID-19 crisis, these leaders repeatedly demonstrated the ability to anticipate and respond proactively to the needs of ELs. Superintendents played a key role, but they were not alone. Assistant superintendents, EL directors and coordinators, principals, and teacher leaders all contributed to meeting ELs' needs. Leadership was evident, widely distributed throughout the system, based on a shared vision and coherence (Scheurich and Skrla, 2003; Honig, 2006; Hopkins, 2016), and led the focus on equity for ELs throughout the system.

Professional Development – Addressing the Digital Divide Through Effective Teaching for English Learners

"If you want teaching and learning to be solid, you have to have strong professional development. . .."

The *National Study of English Learners and Digital Learning Resources* (United States Department of Education, 2018) surveyed 700 teachers of ELs regarding their use of digital learning resources (DLRs) and support features, including visual, auditory, translation, and collaboration and found that teachers use general DLRs rather than those designed specifically for EL students; very few teachers reported assigning DLR use to EL students outside of the classroom, and they reported barriers to using DLRs with EL students that stemmed from students' lack of technology resources at home. Linking this finding to the research base on effective teachers of ELs indicates that they build their knowledge about the curriculum and school context, engage in inquiry about their own practice, and deepen subject

and linguistic knowledge for teaching ELs (Goldenberg, 2008; Faltis et al., 2010; National Academies of Sciences Engineering and Medicine, 2017). They also support the development of family engagement strategies, policies, and programs (Mapp and Bergman, 2019), consistently analyze, and change their beliefs and practices (Lucas et al., 2018). Professional learning targeting both the use of EL-specific DLRs along with EL research-based pedagogies is essential for the development of effective EL instruction during remote learning.

Examples from policy documents include:

- Elementary and secondary schools have teacher leaders, EL coaches and EL mentors, who are provided extra professional development related to English language instruction and acquisition.
- The needs of EL students are being met by ensuring that all teachers have access to integrated ELD online materials as well as designated supports for the long term English Learners which are also being offered to address academic language acquisition. Additionally, bilingual para educators have been trained to provide additional support as needed to students.

All districts significantly increased professional development both for technology and to meet the equity pedagogies focused on ELs. The director of English Learners in Sand School District, shared the impact of the switch to remote learning on their professional development, *"It really forced us as a district to reevaluate the urgency for that need [technology training for teachers]. The whole department and the whole division started to think about how we were going to provide professional development for our teachers. And so the technology TOSA and one of our EL TOSAs got together and developed the series of professional development."* The Marina School District Director of English Learners described their professional development focused on using effective strategies and the ELD standards,

> *...for our first professional development day we offered an introductory workshop to the teacher toolkits [for EL instruction] and then...we had links to those [toolkits]. They are available digitally, as well as the ELD standards. And then as the year goes on what we are planning is, instead of kind of a large-scale big kind of PD, is how we are working a little bit more intentionally using our TOSA teachers.*

The shift to online professional learning was implemented as a result of districts' longer-term planning around ELD as these enhanced collaboration across divisions whose professional development agendas may not have intersected previously.

Families as Leaders and Partners

> *"We really need the parents to partner with us...."*

The Migration Policy Institute's recent report (Sugarman and Lazarín, 2020) indicates that schools' efforts to support student learning at the onset of the pandemic fell short for many ELs and students in immigrant families; researchers who conducted this investigation identified key barriers, including the lack of access to digital devices and broadband, school-family communication gaps, and parents' limited capacity to support home learning. A bright spot of this study reveals that our sample district participants appear to have broken down some of these barriers and actualized promising practices that exemplify equity leadership. These include: intentionally prioritizing family-school partnerships, systematizing outreach, offering multilingual communication, and differentiating support for families of ELs – a testament to personal and collective commitment to address systemic inequities magnified by the pandemic.

At the onset of the pivot to distance learning, the primary focus across our sample districts was to ensure students and families had devices, internet connectivity, and information on how to access online learning sessions. Most study participants expressed views about families as leaders and partners in distance learning that represent counternarratives to research that indicated school systems struggle to meet the instructional and linguistic needs of ELs and communities with large EL populations, especially those challenged by communicating with parents who may have limited fluency in English (Tarasawa and Waggoner, 2015). These counternarratives offer opportunities for leaders to individually and collectively become actors within systems to enact equity through transformative action (Miller et al., 2020).

Proactive Outreach and Communication

> *"The parents are calling, and we're calling the parents and abuelitas [grandmothers], too."*

Evidence from participant interview data and documented practices in local policy documents are reflective of research-based practices for family and community engagement. Most notably, these districts exemplify how districts can apply the core tenets of the Dual-Capacity Framework for Family-School Partnerships (Mapp and Kuttner, 2013; Mapp and Bergman, 2019) in distance learning contexts. These core tenets include the identification of challenges specific to school contexts and the creation of established process and organizational conditions that lead to policy and program goals intended to impact capacity outcomes.

Leaders expressed their sense of obligation and commitment to the families of English Learner students and identified specific actions to engender trust amongst school communities at a time when families and students are experiencing a triple pandemic (Cornelissen and Hermann, 2020). In Marina School District leaders consistently emphasized in their words and actions the need to reimagine family engagement based on expressed needs, including social-emotional support, food, and technological skills. Interview data and policy documents stressed that the expansion of multilingual communication was an important aspect of supporting families. A K-8 principal shared, *"Communication is everything. I think it's about continued communication in multiple languages, if we're going to talk about [differentiating for] our English Learners."* Additionally, the district's Local Continuity and Attendance Plan stipulates a commitment to shared decision-making:

Our core value of working collaboratively meant that our students, parents, and families worked alongside district staff to identify challenges and develop solutions. As our parents, students, and staff embraced the [district] spirit of collaboration and continual improvement they co-created the plan for school in the fall with the lessons from spring in mind.

A principal in Sand School District describes how she enlists community support to respond to parents who, "*may be overwhelmed by the kids experiencing isolation, the lack of being able to play and be social, work with their peers.*" This principal not only solicits district counselors to conduct outreach, she also leverages the assets her community liaisons contribute by facilitating mental health workshops for families. Although there was variation across our districts in the ability to provide multilingual communication, leaders expressed a consistent will to systematize proactive outreach to families of ELs, and they also identified innovative use of technology to provide access to distance learning. In Ocean School District, local policy documents identify the use of communication systems such as ParentSquare to increase the ability of staff to send messages to parents who speak a language other than English or Spanish. Reef School District leaders describe the creation of technical assistance videos provided in Spanish for families to assist their students. The district Language Line and translators are available to all schools and families to ensure that all communication, especially including instructional materials, are accessible. Notably, per the Learning Continuity and Attendance Plan, Reef Adult School offers English Language Development classes for parents as well as assistance with technology and distance learning. The Director of EL and World Language Programs in the Ocean School District describes her leadership efforts to empower families and provide a counternarrative to the deficit perspectives that often prevail. "*We needed our families, especially our EL parents that were so worried that they thought they weren't good enough, they weren't smart enough to teach and help their kids, to empower them to say, 'No, we're going to help you.*"

Differentiated Support for Family and Student Engagement During Distance Learning

"I think if your parents feel safe enough to ask you for something or tell you something's not right, it's because they trust you. . . ."

Bryk and Schneider (2002) contend that social exchanges within a school community are dependent on social relationships, or relational trust. Leaders' actions validate these expectations and can result in enhanced collective capacities to support organizational change. The aforementioned Dual-Capacity Framework (Mapp and Kuttner, 2013; Mapp and Bergman, 2019) includes trust as an essential process condition, and our study participants proved to be pioneers in creating organizational conditions and establishing policy and program goals for equity leadership in distance learning intended to impact capacity outcomes for ELs. Based on interview and local policy document analyses, leaders expressed their intent to affect beliefs and values in the virtual learning space and their actions indicated they differentiated services and support for family and student engagement.

Our study also provided exemplars of efforts to get parents to engage with each other—a strategy that was described across several districts. They recognized the importance of connecting parents to share, answer, even commiserate with each other in their new role as parent and co-teacher during distance learning. The EL Coordinator in Shell School District repurposed requisite District English Learner Advisory Committee (DELAC) meetings to "*have a power group, a group of parents coming together. . .It's just a place for them to be able to speak.*" Even though the district has other family meetings such as their "Supper with the Superintendent," the EL Coordinator responded to parents' expressed need for differentiated support to create a safe place where families could share, "*Hey, I'm struggling with this. What are you guys doing? How do I address that?*" Similarly, our analysis of local policy documents, namely the COVID-19 Operations Reports, also revealed concerted efforts to connect with families for delivering high-quality distance learning opportunities.

We should note that in our triangulation of data sources, we gathered more evidence of families as partners than families as leaders. The state-required Learning Continuity and Attendance Plan required districts to actively seek input from parents in the development of their plans for school reopening. Some districts used established parent leadership committees to support this; others used surveys to gather parent perspectives and preferences. We contend that an essential component of family engagement is the inclusion of families as leaders and that all families and especially those of marginalized groups like ELs, must be emboldened to be leaders and full partners in the development of plans for programs and services. Recent research supports the assertion that transformative possibilities emerge when we move from individualistic, deficit-based approaches to families to tapping nondominant parent, family, and community knowledge and collective capacities in the theory, policy, and practice of learning and systems change for educational equity (Barajas-López and Ishimaru, 2016).

Equity Partners

"[Our community partners] could get a better deal on [hotspots] than we could."

District leaders strategically and intentionally accessed their political, economic and social capital to support ELs throughout the pandemic. They actively sought out additional funding sources that would allow them to obtain to circumvent institutional, financial, and personnel roadblocks and to implement prompt and decisive action during the pandemic. During the initial pivot and continuing during the initial months of distance learning, all leaders in our study asserted their commitment to focusing on immediate needs to ensure all students would have the best education possible in a very difficult situation. The most pressing immediate needs were devices and internet connectivity for students to participate in distance learning from home. Many districts had to purchase devices; all had to obtain hotspots for internet connectivity. We found instances where administrators enlisted the support of city leaders to access lower pricing and ensue delivery of the needed technology. For example, the Sand Elementary School

District superintendent described her assessment of existing district resources and equity partners' political capital to address the digital divide in her district's community. *"We were all busy trying to buy hotspots and, you know, find that information for our families, we ended up partnering with the city because the police, because they could get a better deal than we could."*

A high school principal in Marina District highlighted the benefit of the district's reliance on social capital to engage community partners in supporting English Learner newcomer students and other high needs populations to achieve online connectivity.

> *Community foundations came together and donated a total of about $55,000 to help us plug that gap, and we're now in the process of doing what we can to get students connected with a real internet connection, rather than just a wi-fi hotspot so that the hotspots would be used for people [our newcomer population] where there is no possibility of internet connection.*

Even more challenging as competition for hotspots increased, some districts found themselves with delivery promised, and then rescinded by the telecommunications companies as larger districts began to place their orders, leaving medium-sized districts empty-handed. The superintendent from Ocean school district relied on political capital to ensure delivery. The superintendent expanded his community support to include elected officials and government agencies to advocate for his most vulnerable students and families.

> *Originally we were supposed to start school on August 17 but [our telecommunications company] overpromised and underdelivered. They were supposed to get us all the devices that we needed, or hotspots, by the 13th or 12th and they never did. So, we had to get on the phone with their top leader. They said, "Well we can't get them to you for another 2 weeks." I said no, so we ended up calling the governor's office. Then we talked to [our congressional representative] at Washington…and he made phone calls, the governor made phone calls, and all of a sudden we got all the hotspots.*

We observed that leaders across all of our districts leveraged various forms of capital— cultural, social, political and economic—to connect with each other, their communities and with other partners to leverage key resources for the families most in need. These actions came not from a deficit mind set but rather from a place of commitment and connection (Clark-Louque et al., 2019).

Differentiating Resources: Recognizing and Responding to Equity Gaps

> *"That was tough for us to realize the inequities…we saw the extreme disparities…" "I go back to this idea…one size doesn't fit all."*

California's Local Control Funding Formula is designed to achieve equity through differentiated funding policies at the local level, inclusive of additional funding for targeted student groups such as ELs (Humphrey et al., 2017; California Education Code, 2018). All case study district- and site-leaders stated that the shift to distance learning required them to recognize and act on equity gaps exacerbated by the pandemic, resulting in policies and practices that differentiated human and digital resources. Our results illuminate several exemplars of equity-focused, critical leadership (Santamaría, 2014) that result in key vertical decision-making processes related to finances, resources and staffing focused on vulnerable populations (Edley and Kimner, 2018; Allbright et al., 2019).

Leveraging Resources to Differentiate Services for English Learners

Consistent with the American Institute for Research (2020) survey of public education's response to COVID-19, our study found that leaders in the selected case study districts prioritized resources to support ELs and their teachers. When describing both the initial pivot and ensuing months of distance learning, all leaders in our study asserted their commitment to focusing on the pressing needs to ensure all students would have the best education possible in a very difficult situation.

Our triangulated interview and local policy document analyses highlighted our study participants' commitment to local policy coherence and vertical articulation for resource distribution (Edley and Kimner, 2018; Allbright et al., 2019) during distance learning. Leaders in our case study districts responded to the resource and staffing challenges of the pandemic by addressing the limitations of schooling under quarantine in a way that is consistent with their values and beliefs for educational equity (Rogers and Ishimoto, 2020).

Shell School District Superintendent exemplifies this congruity as he states, *"We feel that we have to …through our supplemental and concentration grant funds to really provide those students that they were intended to be used for, those additional resources so we can compensate for some of those areas that they may have greater challenges in as compared to the general population."*

Most district local policy documents corroborated this commitment to differentiated resource allocation during distance learning by explicitly stating the intent to increase or improve services for ELs as well as delineating actions and services based on student outcome data sources. The following example from Sand K-8 School District specifies an additional dimension in their Local Continuity and Attendance Plan wherein they commit to providing access to the full curriculum and extended learning opportunities.

> *The actions and services outlined in this plan have been principally directed toward English Learner and low-income students based on both qualitative and quantitative data. Funds have been directed to support educational programs aimed at enhancing the development of both academic literacy and English as a second language, extended and enhanced programs in the arts, sciences, mathematics, and other extended learning opportunities beyond the school day.*

Additionally, Sand K-8 School District exemplified coherence across ongoing initiatives and funding as evidenced by multiple policy documents that stipulated LCAP funds earmarked for increasing learning supports for target students, including counselors in every school, social-emotional learning,

Responsiveness to English Learner Typologies

In most districts, leaders emphasized the importance of differentiating and/or repurposing staffing based on specific English Learner typologies, including newcomers and Long term English Learners. The assistant superintendent of educational services in Marina K-12 School District described the needs of late-arrival newcomer students (Guatemalan population) and expressed the issues of extra time and resources to obtain sufficient credits to graduate. "*Spend more money to prolong their [newcomer's] day or can we think creatively in terms of just their curriculum or how they spend their day or why does it have to be just these six periods? So those are the things I think about in terms of resources for our most vulnerable kids.*"

Local policy documents also indicated an increase in supplemental materials and staff to support ELs. "Additionally, bilingual para educators have been trained to provide additional support as needed to [English Learner] students."(Shell School District LCP)

Similarly, leaders in Reef School District included the following in their COVID-19 Operations Report and their Local Continuity and Attendance Plan. "In addition to the work of EL coaches and mentors, the [Reef School District] provides support to EL students and families telephonically, as well as online. The Language Line and translators are available to all schools and families to ensure that all communication, especially including instructional materials, are accessible."

Overall, leaders in our study affirm their personal and collective responsibility to provide differentiated resources as they actualize their responsibility for and commitment to education equity during the pandemic (Edley and Kimner, 2018; American Institute for Research, 2020).

CONCLUSION

"*Our English Learners can and will succeed through this all if we as teachers reach out, and, again, maintain the rigor, maintain the relevance, make it relevant to their life, value who they are. Multilingualism is an asset, especially during this time of COVID.*"

This study demonstrates the value of grounded theory to examine policies and practices of leaders of color during the early phases of COVID-19 as they relate to one of the most vulnerable populations in our nation—English Learners. The global pandemic brought into crisis most, if not all, of the major societal institutions. As we explored how education leaders enacted equity through their actions, words, and written documents, our observations led us to conceptualize equity leadership for English Learners as a framework during the pandemic. Our analysis did not include the experiences of English Learner students, nor of their teachers directly; these limitations warrant that further research should extend far beyond the duration of the pandemic. Indeed, the leaders in our study expressed as much and are now planning

for the learning recovery that will undoubtedly need to occur across our nation for our children most in need. As one middle school principal in Reef School District summarized:

> *I see it as an opportunity to interrupt how we've always done things in education, being an institution with structures and systems. We know that we have an opportunity and a responsibility as leaders to examine those systems and structures and identify ways where it's not working. We know that the systems are not working for all of our students and so, if this is an opportunity, I just encourage everybody…to examine what we've been trained for [what an equitable] education can look like and [what equitable] teaching and learning can look like and find those opportunities where we can make shifts to better support our students.*

This also has implications for leadership preparation programs; creating equity policies requires that emerging leaders have the knowledge and tools that implementing equity policies in schools demands.

Our framework proposes conceptual clarity regarding equity leadership by defining six empirically generated themes that addresses the need for coherence in systematizing equity. This framework includes the aligned effort of educators across all levels of the educational system, even including outside partners. Nevertheless, the six themes of our framework warrant further exploration; indeed most, if not all, could readily apply to other marginalized student groups and would require specificity related to each student groups' unique needs. In fact, the Equity Leadership for English Learners Framework does not solely reflect the policies and practices of leaders of color alone; they are generative and require testing and replication (Lucas, 2003).

We end on a note of appreciation for educators, students and families. We sought to understand excellence in leadership during the pandemic; we found evidence of systemwide examples of excellence *and* equity from deeply committed educators. The district and site-level leaders in our study recognized the importance of high-quality curriculum for English Learners, the professional development to enact this curriculum, the value of partnerships with families and community support, and the wisdom and courage to differentiate resources through the lens of equity.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Loyola Marymount University IRB. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

ML is Distinguished Professor and founding Executive Director of the Center for Equity for English Learners in the School of Education at Loyola Marymount University. Her research addresses the intersections and impact of policies and practices for culturally and linguistically diverse students, their teachers and school leaders. LK is an Adjunct Professor in the School of Education at Loyola Marymount University where she teaches courses in Educational Leadership. She recently retired as Superintendent of Azusa Unified School District in California. EA is the Director of Programs and Partnerships for the Center for Equity for English Learners and Affiliated Faculty in the School of Education at Loyola Marymount University. For over 30 years she has collaborated with TK–12th-grade educators and conducted research in the areas of leadership, curriculum, integrated standards-based instruction, assessment, and family/community engagement in culturally and linguistically diverse settings. GL is a Research Associate with the Center for Equity for English Learners in the School of Education at Loyola Marymount University. She has 20 years of experience conducting educational program evaluations and utilizing mixed methods for research on culturally relevant and responsive education. All authors contributed to the article and approved the submitted version.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2021.636281/full#supplementary-material

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South African Higher Education Institutions at the Beginning of the Covid-19 Pandemic: Sense-Making and Lessons Learnt

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After the unprecedented changes experienced in higher education due to the Covid-19 pandemic, there is a need to integrate initial thoughts and reflective experience to decide on the way forward. This study aimed to reflect on, and make sense of the events related to South African higher education institutions HEIs at the onset of the COVID-19 pandemic by using the Cynefin framework. Data from a rapid review of online media at the onset of the Covid-19 pandemic and a collaborative autoethnography session 1 year since lockdowns were implemented are used to present perspectives for the sense-making process. This offers insights to both ends of the spectrum as it highlights the evolution of processes taking place at multiple levels from government policies to institutional practices, as well as how this impacted on both staff and students. The Cynefin framework demonstrated sense-making efforts in the disordered, to the chaotic, to the complex, then to the complicated and eventually to the simple domain. Each domain ushered in its peculiarities and highlighted the issues ranging from vulnerabilities experienced in the higher education sector, to trying to reconfigure the academic year, to dealing with wicked problems, to eventually relying on expert assistance to navigate the virtual university space. Trying to establish causality in the simple domain proved challenging as the information available during the time was sparse. Despite these challenges, the lessons learnt include the importance of the sense-making process among all academic staff, the significance of collaboration and team efforts and the need to adapt leadership and self-leadership approaches to the changed ways of working in higher education institutions.

Keywords: sense-making, cynefin, COVID-19, higher education, South Africa, collaborative autoethnography, rapid review

INTRODUCTION

Higher education institutions (HEIs) worldwide are affected by the COVID-19 pandemic with resultant campus closures to enforce social distancing measures (Toquero, 2020). Whilst the disruption was one of public health, the impact on Higher Education Institutions (HEIs) was momentous (Krishnamurthy, 2020). Many institutions were compelled to identify and implement various strategies that contributed to sustaining the academic project and these included but were not

limited to engaging in emergency remote learning and teaching, working from home arrangements for staff, finding alternative ways to support students and reallocation of budgets to address the emerging needs. The COVID-19 pandemic changed the lives of students in multiple ways, including displacement from their homes and campuses, financial struggles, loss of internships and the need to learn new technologies in addition to the content of their subjects (Govindarajan and Srivastava, 2020).

From an operational perspective, most South African HEIs have business continuity plans in place as a result of learning from the #feesmustfall movement in 2015/2016, which sparked heated debates and militant student protests on the fee increases in South African universities (Pillay, 2016). The operational result of these protests included implementing business continuity plans where all academic activities had to be conducted online or off campus due to the volatility of the protest action by students. While these plans may be useful, it is unclear whether these plans were, and are, effective for the preparedness of HEIs to deal with unprecedented threats such as the COVID-19 pandemic (Dikid et al., 2020) to the academic project. Toquero (2020) reports that numerous higher education institutions in the Philippines were completely unprepared for such an event. Rashid and Yadav (2020) point out that during the COVID-19 pandemic there are no best practices for HEIs to mimic and no known models to follow. Similarly, Bryce et al. (2020) acknowledge that established crisis management responses can be ineffective and business continuity can be severely disrupted during a pandemic.

According to Wangenge and Kupe (2020):1, "the unfolding of the COVID-19 pandemic in South Africa is interwoven into an existing socioeconomic context ridden with poverty and deep, unsustainable inequalities". Aligned with this, HEIs in South Africa faced an uncertain future as dwindling funds in the sector was a challenge. This meant that HEIs had to consider various aspects when they made decisions on how to manage the pandemic, but also on how to plan for sustainability. More than 1 year after the announcement of the COVID-19 pandemic, this article attempts to make sense of what happened in order to extract lessons for the way forward. The first quarter of the COVID-19 pandemic (april - June 2021) referred to as the "hard lockdown" period, or Levels 5 and 4 of the COVID-19 pandemic lockdown levels, was characterized by uncertainty and isolation for people living, studying and working in South Africa. Many individuals relied on news from online and social media for information and sense-making. Naturally, what was reported in the media may not have provided the full picture of what was happening behind the scenes to keep HEIs operational and to save the academic year (www.cdc.gov/coronavirus/2019-ncov/community/colleges-universities/considerations.html, accessed on June 10, 2021). Therefore, the need to incorporate different sources of information, including the experiences of those who were employed in the HEI sector, is paramount for effective sense-making.

This study aimed to reflect on, and make sense of the events related to South African HEIs at the beginning of the COVID-19 pandemic. Sense-making aims to create a holistic picture of an event that cannot be understood clearly (Ganon-Shilon and Schlechter, 2017). For this purpose and in the context of higher education and the COVID-19 pandemic, messages conveyed through different online media sources were reviewed together with the reflections of academics' lived experiences of such an ambiguous event. Initial thought processes and experiences were plotted on the Cynefin framework (Snowden, 1999) to assist with translating new knowledge into learning and suggested actions.

MATERIALS AND METHODS

Research Design Overview

This study focuses on the HEIs initial responses to the COVID-19 pandemic. The data was collected in two phases. First, a rapid review of online news media was conducted to determine the preparedness and crisis responsiveness of institutions of higher education at the onset of the COVID-19 pandemic. The reason for the rapid review is that news report online media was ahead in providing information regarding the pandemic, monitoring disease management and behavior of people (Sahni and Sharma, 2020). Whilst news media was responsive in communication, universities extended recess periods and took time to prepare their response. Therefore, in the absence of clear direction communicated by the university, many academics at the research university had only news reports to use for sense-making. This review formed part of a larger project, known as the #Openupyourthinking SADC researchers' challenge hosted by JET and UNESCO (https://www.jet.org.za/covid-19-research-response/sadc-research-challenge). The main purpose of this challenge was to contribute to evidence on how education and training systems in the SADC regions are affected by, and respond to the COVID-19 pandemic. The #openupyourthinking 'bootcamp' challenged researchers' to conduct and present their research findings within 6-weeks, between april and May 2020. Using the rapid review design allowed us to meet the deadline. Rapid reviews are useful when there is an urgent need for synthesizing information in order to provide guidance to the public or a specific stakeholder (Tricco et al., 2017). The guiding principles for how this method was used were: the amount of time in which one has to conduct a rapid review significantly impact on the extent to which a comprehensive search for all available evidence is conducted, and therefore, a process for identifying evidence is needed to ensure the search is effective and efficient to produce relevant results in a timely manner. The actual review was initiated in May 2020, and completed in July 2020. The content review took place between april 2021 to June 2021.

Phase 2 utilized a collaborative autoethnography approach to capture the reflections and experiences of a team of researchers. Eleven researchers participated in a collective sense-making session, aimed at capturing the narratives, experiences and reflections of researchers through collaborative ethnography. Collaborative Autoethnography (CAE) is useful as it sidesteps issues of voice appropriation, given that all collaborators are acknowledged as co-owners and co-authors in this study. This method was chosen specifically because: 1. it has the potential to

lessen power dynamics as all co-researchers are rendered vulnerable in sharing their stories; 2. it provides a multi-disciplinary lens to the inquiry, resulting in addressing issues of rigor, narcissism, or self-indulgence (Chang, 2013). The philosophical underpinnings of a qualitative descriptive approach, as adapted from Bradshaw et al. (2017) has been adopted here and is represented by an emic perspective, or an insider view. The group session was held in april 2021. Thereafter, captured reflections were circulated in writing to the team of researchers, and further interactions of reflections were captured. For the data analysis, the explanation of the findings was guided by the Cynefin framework.

The Cynefin Framework as Interpretation Frame

Snowden (1999) conceptualized the Cynefin framework, drawing on, amongst others, systems, complexity, network and learning theories. The Welsh word 'cynefin' refers to 'habitat', indicating a myriad of relationships such as those of kinship, culture and location (Van Beurden et al., 2013). The theory is built on the premise that one is never fully aware of all the relationships in the habitat, however, the patterns of multiple experiences that emerge from them influence all interactions (Kurtz and Snowden, 2003). The Cynefin framework therefore helps individuals and groups to make sense of this complex process and to act appropriately.

Utilizing a constraint-based definition, the framework categorizes the "places of multiple belongings" - situations - into five exclusive domains namely the disorderly, chaotic, complex, complicated and simple, each with its own principal differences, and warranting different ways of responding and management (Lambe, 2007). The domains are predicted on the construct of order (Snowden, 2010). The ordered domains are labeled *simple* and *complicated*, whilst the un-ordered domains are *complex* and *chaos*. It is worthwhile to note that un-ordered domains do not refer to a lack of order, but rather a "different" type of order, i.e. order that is not directed or designed, but "emergent" (Kurtz and Snowden, 2003). A fifth domain exists, namely *disorder*. The section below describes unpacks each of the five categories.

Simple Domain

In this domain, linear causality and patterns of causality are known and well established. The domain is characterized by clear cause and effect, and is in the realm of the "known knowns" (Kurtz and Snowden, 2003; Snowden and Boone, 2007). As such, decision-making is highly predictable and anticipated, as one can sense the situation, categorize it and respond, based on best practice (Kurtz and Snowden, 2003; Snowden, 1999; Snowden, 2000; Snowden and Boone, 2007). An appropriate management model for the simple domain would be top-down control, coordinated by a central manager (Van Beurden et al., 2013).

Complicated Domain

The complicated domain is an ordered domain, characterized by cause and effect. However, in this domain, there may be multiple correct answers. The decision model is therefore to sense, analyze, and respond. This requires expertise to choose the appropriate answer (i.e., good, rather than best, practice). Experts are utilized to (generate and) analyze data in a manner that allows less obvious relationships to be made clear and thus follow good practices to address the situations (Kurtz and Snowden, 2003; Snowden and Boone, 2007). Possible practices are systems thinking and scenario planning. An appropriate group function is co-operation (Van Beurden et al., 2013).

Complex Domain

The complex domain is characterized by unpredictability and change. Cause and effect are only understood in hindsight, and experimentation is required to find answers for the situation (Van Beurden et al., 2013). The approach in this domain is to map the present, explore what can and where things can be changed, monitor closely, reinforce/improve things that are working and disrupt those that are not working–a typical "probe–sense–respond" (Kurtz and Snowden, 2003; Snowden and Boone, 2007). While in this situation, it is important to ensure that one does not fall into the traditional command-and-control management style. Learning is a critical tenet, coupled with patience. Imposing order could be fatal, whilst encouraging distributed leadership among diverse and strongly linked partners is also considered advantageous. A highly collaborative approach to group function is desirable, and the more diverse the partners, the better a system can be understood and appropriate probes be developed (Van Beurden et al., 2013).

Chaotic Domain

Turbulence and the absence of any link between cause and effect characterize the domain of chaos. There is no semblance of order under this situation. Hence, it is impossible to anticipate any patterns of cause and effect (Kurtz and Snowden, 2003; Snowden and Boone, 2007). Swift action, at times with very minimal consultation, is required lest the situation deteriorates even further. Hence, emergency measures (act) are enforced, and as the situation stabilizes, there is an opportunity to describe what is happening (sense) and respond as informed by emerging reality (Kurtz and Snowden, 2003; Snowden and Boone, 2007). There are no constraints under the chaotic domain, thus it creates opportunities for creativity and innovation with novel choices. From a leadership perspective, directive interventions are needed to manage the crisis in an attempt to move to a different domain (Van Beurden et al., 2013).

Disordered Domain

The fifth domain, namely disorder, is where people are unable to decide which of the other domains represent the situation. When in this state, it is important to constantly appreciate the realities of the day and avoid seeing all apparent problems in the light of previously successful solutions or making decisions based on personal preferences (Kurtz and Snowden, 2003; Snowden and Boone, 2007). Pausing and reflecting are critical tenets when one is unsure. This domain can be reduced in size through discussion and sense-making of the situation to reach consensus and to choose the appropriate type of response (Van Beurden et al., 2013).

It is important to note that no domain is more desirable than another. The domains are merely used to describe the situation facing the organization to assist with creating meaning and deciding on appropriate action. The underlying tenet of this sense-making framework is the recognition that situational awareness is critical to provide structured and conscious insights that help shape and frame informed decisions by leaders (Snowden, 1999; Snowden, 2000).

Epistemological Positioning as Participant-Researchers

Central to collaborative autoethnography is the duty of all participant-researchers to reflect on their subjectivities as stakeholders who take ownership of their culturally-informed biases, assumptions and beliefs as well as how these have facilitated their experiences and moderated their storytelling about the project in question.

The discussions about the project were undeniably shaped by their homogeneity as academics and researchers from a historically disadvantaged institution (HDI). While the common denominator is their membership of a HDI, they are employed in diverse positions ranging from a Deputy Vice Chancellor position, to Deputy Deans, Associate Professors, Directors, Researchers and Research Assistants. This multiplicity of positions thus influenced the issues that were highlighted and those that may have been omitted. Additionally, their reflections were influenced by their direct experiences of the COVID-19 pandemic while being situated in a position of historical disadvantage, particularly where resources are concerned.

Data Collection
Phase 1: Rapid Review of Online Media
Search Strategy for the Rapid Review

Searches were limited to websites from the *DispatchLive, eNCA, Daily Maverick, Inside Education, News24, Mail & Guardian, Times Higher Education, the Sunday Times Live, Bhekisisa, ADEA, University World News Global, The Conversation* and *Google News*. The time period was april to June 2020. Forty search terms were used related to higher education institutions, universities, COVID-19, impact and stakeholders (staff, students, academics). The search focused on universities in the SADC region. It is noted that most sources referred specifically to HEIs in South Africa and the South African government. The eligible online news articles uniform resource locator (URL) site was captured on an excel spreadsheet and duplicates were removed.

Inclusion and Exclusion Criteria

The online news URL website was recorded if they reported on the preparedness and responsiveness of HEI's during the COVID -19 pandemic.

Screening and Eligibility

Three teams of two to three researchers conducted the searchers. The teams included a lead researcher and one or two researchers

from two African universities. The selection of online news sources was guided by the research objective: What is online media focusing on to describe the impact of COVID-19 on stakeholders in higher education? The news sources specifically focused on the impact of COVID-19 on higher education and included a variety of media types including interviews, reports, opinions, essays, etc. To enhance reliability, the research team differentiated fake from real news by applying the following evaluation criteria: consider the source (click away from the story to investigate the site, its mission and its contact information), check the author (are they credible and real?), check the date (to ensure current events), check your biases (consider how own beliefs could affect one's judgement), read beyond (check exaggeration and the whole story), assess supporting sources (does supporting links corroborate the facts), is it a joke (research the author and site to validate), and ask the experts (ask a librarian or consult a fact-checking site). The purpose of evaluating online media was to describe the impact of COVID-19 on stakeholders in HE. Each team was allocated four to five online news media platforms. The researchers on each team worked independently to search for the eligible news articles. This was then assessed by the other researchers on the team. Disagreements were resolved via discussions through online meetings to reach consensus. If consensus could not be reached, the lead researcher was consulted.

Quality Assessment and Data Extraction

Data were independently extracted using a self-constructed data extraction form to include the media platform, link, date extracted, reference, title, preparedness and responsiveness. The data extraction framework was adapted from Roman and Frantz (2013) according to the aims and objectives of the study. The findings from all the news media platforms were collated into one excel spreadsheet, analyzed for common themes and reported via a narrative summary.

Phase 2: Collaborative autoethnography
Research Setting and Data Collection

Eleven researchers, affiliated to one public university in South Africa, were conveniently sampled and met in a group setting with the distinct purpose of sharing personal narratives and experiences of a specific social phenomenon. The session was facilitated by the first author, who posed the following question to the group: "It is the period of april to June 2020, think of the preparedness and responsiveness of HEI's at the beginning of the Covid-19 pandemic." Participants could then volunteer their experiences and indicate which quadrant of the Cynefin framework best characterizes the experience. The facilitator asked questions such as: "In which quadrant do you think that experience fits?"; "Am I correctly naming the experience?". The facilitator captured the experiences and bullet point notes to explain the experience on a flip chart, organized by the quadrants of the Cynefin framework, whilst another author captured underlying themes that emerged during the discussion. The facilitator used the skills of paraphrasing and empathic responses to deepen the sharing of experiences. These

Demographic characteristic	Number of participants
Gender	
Female	8
Male	3
Age	
20–30 years old	3
31–40 years old	1
41–50 years old	2
51–60 years old	5
Tenure at the institution	
0–5 years	4
6–10 years	1
11–20 years	3
21–30 years	2
31+ years	1
Faculty	
Community and Health Sciences	7
Economic and Management Sciences	2
Division for Research and Innovation	2

experiences were then deepened by reflections from other researchers. Facilitative questions such as: "Is there anyone else who had a similar experience?"; "What sense did you make from the experience?" were used. The session lasted for 60 min. **Table 1** displays the demographics of the researchers.

The iterative process of reflection was continued through circulating the captured reflections with the group of researchers via a shared Google document. Further reflections and sense-making was captured and incorporated, as relevant.

Ethical Considerations
The researchers received ethical clearance from the respective university to which they are affiliated. All online media sources utilized in phase 1 are available in the public domain. In phase 2 we considered that for collaborative autoethnography to be effective and ethical, all participation was completely voluntary, the sharing space was not hierarchical nor coercive and there was consensus on the focus of the project. In this study, all co-researchers were consulted and written informed consent was obtained. The discussion was facilitated by the first author, a trained psychologist, who was attuned to the needs of the group. Due to the sensitive nature of the discussion, the facilitator allowed all participants to debrief as well. Participants' responses were not identified by name, thereby limiting confidentiality concerns.

Data Analysis
As mentioned, the Cynefin framework was used as a lens to understand the phenomenon being studied. The data set consisted of two elements which are discussed in the subsections.

Media Findings
Two researchers (CJ and AS) worked together throughout the analysis process which was an iterative one. They read through all the media extracts and allocated them to the five domains. A

narrative was developed to describe the themes under each domain.

Collaborative Autoethnography Findings
A process of interactive qualitative analysis (IQA) was followed for the analysis of the collaborative autoethnographic data. IQA provides a systemic, rigorous and accountable framework for qualitative inquiry (Northcutt and McCoy, 2004), especially when researchers wish to examine how phenomena are socially constructed. During the collaborative autoethnographic process, participants were asked to share their organized thoughts and experiences. The words representing codes were socially constructed through in-depth discussion, reasoning, and expressing individual thoughts and experiences on a flipchart for all to see and agree on. After participants were satisfied with the names and the categorization within the Cynefin framework, the comprehensive description was captured by two authors (MdP and MA). The description was subsequently circulated to all the participants for further clarification, finalization and additions. This research method directly challenges the idea that the researcher is the expert who must "interpret" the participants' data. Thus, what sets IQA apart from other forms of qualitative inquiry, is that participants are entrusted with the theoretical analysis and interpretation of their data. The Cynefin framework was used to interpret the data.

RESULTS

The integrated themes from the rapid review and CAE process were plotted on the Cynefin framework. Themes were kept within the domain in which it was identified. Furthermore, the themes based on the strategies contained within the domain were assessed. In this regard, *sense* is explained as assessing the facts of the situation, *categorize* is to organize the facts, *respond* indicates formulating a response based on established practices, *analyze* reflects investigating options available, *probe* means to explore options, and *act* reflects taking action.

Disordered Domain
The disordered domain represents the inability to decide which of the other domains represent the situation. In the initial phase of the COVID-19 pandemic in South Africa, the online media and the CAE findings revealed that the higher education sector was in disarray. This is representative of the major uncertainties experienced and the vulnerabilities exposed through the inequalities and inequities experienced by both students and staff. This is discussed further below.

Ambiguity and Uncertainty
In response to the COVID-19 pandemic, South Africa entered into a 21-days lockdown on Thursday, 26 March, and due to infection rates rising, the lockdown was extended to the end of april 2020. At this time, higher education institutions, together with the Department of Higher Education and Training, were faced with tough decisions concerning the academic year,

resulting in disorder. With all institutions closed, questions were raised about salvaging the academic year.

> Do we take a risk and reopen schools, colleges and universities for the sake of salvaging the academic year? Is it a risk worth taking, given the possibility of mass infections in those spaces? City Press, 16 april 2020, Mabhele Dyasi[1]

This uncertainty was mirrored by the experiences of participants in the CAE. Having been at the forefront of higher education changes as the COVID-19 pandemic lockdown was announced, participants agreed that major uncertainty was experienced. No one knew the extent of the COVID-19 pandemic, nor the measures that needed to be taken. Ambiguity was evident as participants initially prepared for a 3-week lockdown followed by a return to campus, but it soon became clear that this would not happen. A dire need for clarity and direction were needed as participants struggled to make sense of the situation.

Higher Education Sector Is Vulnerable

The higher education sector was at its most vulnerable and disordered at the start of the COVID-19 pandemic. Vulnerability was identified within the institution as well as amongst key stakeholders like students and staff. This was depicted in the *Daily Maverick*.

> "while it is true that our institutions do have a greater or lesser proportion of vulnerabilities, the reality is that our entire sector is vulnerable."[2]

Furthermore, the COVID-19 pandemic exposed the inequalities within and between universities as some institutions were ready to move to teaching online and continue with the academic term, whereas others faced severe constraints related to students' poor access to technology and poor socio-economic circumstances.

"it would have us believe that our sector is divided between universities that are largely "good to go" and universities that are unable to proceed due to severe constraints of their students, including poor access to technology, and poor socio-economic circumstances particularly at this time of an economic downturn... The bigger reality is that we have been leaving students behind for decades."

Daily Maverick. 3 May 2020. Suellen Shay[3]

While universities made strides towards preparing to go online, the online media depicted that the COVID-19 pandemic exposed the gaps and vulnerabilities of universities and that "*we have been leaving students behind for decades.*"

Lack of Technology Devices

The challenges surrounding online learning highlighted the inequalities at higher education institutions and demonstrated that South Africa may not be prepared for the 4th industrial revolution. *The South African* stated:

"This pandemic is proving that South Africa is not ready for the Fourth Industrial Revolution (4IR) if its implementation calls for some people to be left behind. It also highlights the gap that exists between the rich and the poor, and that the marginalised and disenfranchised are always left behind."

The South African, 10 June 2020, Nokwanda Ncwane[4]

The lack of technology devices highlights systemic inequities among HEI's in South Africa, with political parties calling upon the Department of Higher Education and Training to provide digital learning devices, such as laptops, and furthermore, universities appealing to the public and business sector to assist by funding laptops and data for students who were unable to engage in remote learning. One political party stated:

> ... it is the duty of a responsible government to look out for the poor and historically disadvantaged... the State should not hesitate to purchase laptops and data for all students in historically black universities so that their learning can continue virtually.

The South African, 12 May 2020, Andrea Chothia[5]

In addition, CAE participants recalled that staff members *lacked technology* resources, and were urgently issued with laptops, or permission was given to take desktop computers home.

Not only did online learning usher in its own challenges, but so did online teaching with one of them being the implementation of and quality assurance of remote teaching. In addition to the above-mentioned challenges, it was recognized that programs such as lab-based research and experiential and clinical training could not automatically be transported to the online space. This compelled stakeholders to seek solutions for flexible learning pathways jointly. This is depicted by the *World Education Blog* below:

> There should be a coordinated approach between governments, quality assurance agencies and higher education institutions that addresses not only available resources but also a broader vision of what

[1]https://www.news24.com/citypress/voices/will-the-2020-academic-year-be-salvaged-20200416-2

[2]https://www.dailymaverick.co.za/article/2020-05-03-online-remote-teaching-in-higher-education-is-not-the-problem/

[3]https://www.dailymaverick.co.za/article/2020-05-03-online-remote-teaching-in-higher-education-is-not-the-problem/

[4]https://www.thesouthafrican.com/opinion/remote-learning-lockdown-challenges-south-africa/

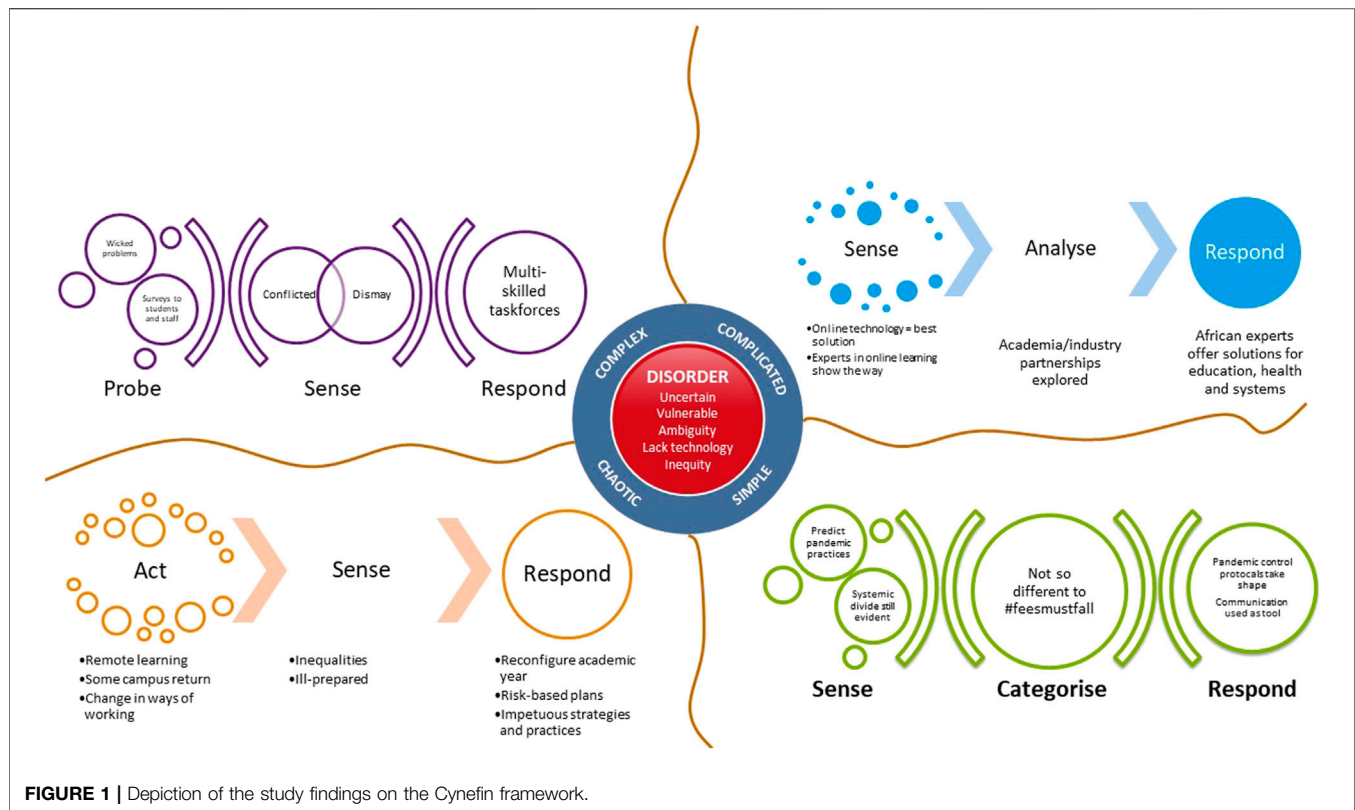[5]https://www.thesouthafrican.com/news/laptops-data-for-pupils-students-during-lockdown-eff/

FIGURE 1 | Depiction of the study findings on the Cynefin framework.

flexibility of learning can provide. Offering more flexible higher education in terms of delivery and pacing will be unavoidable if the Covid-19 crisis is going to be around for a while, and defining flexible quality standards for it will be indispensable as well.

World Education Blog, 7 May 2020, GEM Report[6]

Chaotic Domain

The chaotic domain, being characterized by turbulence and a lack of order, includes a number of experiences that reflect the need to *change the established ways of working*. Swift action, at times with minimal consultation, is required lest the situation deteriorated even further. Hence, emergency measures (*act*) are enforced, and as the situation stabilizes, there is an opportunity to describe what is happening (*sense*) and *respond* as informed by emerging reality (Kurtz and Snowden, 2003; Snowden and Boone, 2007). **Figure 1** provides a visual representation of the different domain's themes and sub-themes identified.

Act
Moving Online
As universities prepared to switch to remote online learning and teaching, the *Daily Maverick* listed four critical issues that needed to be considered by universities to make online learning a success.

"The lockdown has several implications for universities in South Africa. Universities have sent their students home and they have been informed that the second term will be completed online . . . There are four critical issues that universities have to consider to make their online venture a success: affordability, connectivity, assessment and student support. The most important of these four issues are affordability and connectivity."

Daily Maverick, 9 april 2020, Jacob Cloete[7]

In contrast to the media's online requirements specified above, one aspect that was not taken into consideration was how moving online affected academic staff. When participants from the CAE were asked to think back to the onset of COVID-19, participants reflected on the sudden move from face-to-face to online learning and teaching, and more so, online meetings. The CAE findings revealed that at the beginning of this process, no one knew how online meetings and teaching worked, what the protocols were, or the length and volume of the meetings. A further observation was made that online meeting behavior was different to face-to-face social norms. A participant expressed it as "Some people become 'brave' in what they say", referring to meeting participants who will say things they would not usually say in a face-to-face meeting, whilst others receded into the backline and hid

(physically by switching off the camera, remaining silent, or hiding behind the excuse of a bad connection).

Furthermore, participants reflected that the online environment changed the nature of relationships. Some found it more difficult to manage conflict in this environment. For others, the virtual format of the meeting provided a buffer: "I was glad I was online, because I would have smacked some people." Additionally, new staff members found the online environment very challenging as they lacked the opportunity to meet and interact with their colleagues face-to-face. One participant expressed: "I didn't know this guy. I didn't know what I could and couldn't say to him."

Change in Ways of Working

The research participants reflected on the many issues experienced with regard to human resource (HR) practices in the changed way of working, a matter which was not reflected in the media. One of the issues experienced was related to no-work-no-pay. For some staff members, whose work became obsolete as a result of the work-from-home approach, it was difficult to have these conversations with HR. Some of these discussions took place irrespective of understanding the personal circumstances of employees. Mostly, rather than retrenching employees, an effort was made towards reskilling. However, this was not an easy task as resistance was experienced from individuals who needed to be reskilled as they felt it was not their fault that their work became obsolete. Leaders therefore had to use creative thinking to determine the area of reskilling, and then deal with the challenges associated with doing this in an online format. Similarly, for employees working from home, it was difficult to implement standardized management approaches as employees' circumstances were so different.

From an occupational health perspective, participants experienced that there was minimal understanding about COVID-19 infection needs and long-term consequences that employees may suffer. There was also no clear policy or implementation of sick leave needed for quarantine, COVID-19 infection with a medical certificate as proof, and assumed COVID-19 infection without a medical certificate of proof. The general uncertainty of how to deal with these matters from an HR perspective led to the use of unstandardized approaches.

Furthermore, participants mentioned that well-being initiatives driven by the HR department received a lot of attention, but were still questioned. The perception emerged that the type of support provided was general and umbrella-like. Whilst mental health was foregrounded by the institution, many employees experienced uncertainty of how to cope.

Phased Return to Campuses

The media reported that in June 2020, universities such as the University of Cape Town, prepared for a phased return of students and staff onto campuses. Despite the return of students and staff, online teaching continued and no contact teaching resumed.

"Under national Alert Level 3, depending on a tertiary institution's capacity, no more than a maximum of 33%

of students will be allowed to return to campus and residences."

"The plan for a gradual and phased return of students, as health and safety conditions allow, does not at this point in any way mean that the current emergency remote teaching programme will stop. UCT will continue with remote teaching until the end of Term 3. The phased return to campus of some staff and students does not mean the resumption of contact teaching."

The South African, 29 May 2, 020[8]

Some authentic experiences of academic staff indicated a strong sense that return-to-work strategies were not adequately thought through. An example was mentioned of an employee who had passed away, and the individual's space was occupied by others. The awareness was raised that staff members may have grieved the loss of a colleague through virtual ceremonies and discussions, but the role of space and place will only be faced when staff return to campus. A critical question to be considered is how colleagues will adapt and deal with multiple losses and changes that took place in the year that they were not on campus.

Sense
Inequalities

Similarly, to the change in ways of working, especially the change in interpersonal relationships discussed above, participants experienced the polarized performance and effectiveness of some administrators. One participant phrased it as "Some administrators went AWOL [absent without leave]." Others reflected on the role that power and rank played in whether administrators would answer/help you. Unfortunately, the higher the employee's ranking, the better the response, which meant that students possibly suffered the most. Apart from receiving responses from administrators, the process of administration was found to be challenging. Participants expressed that it was difficult to accomplish and finish off tasks as new protocols were required (for instance, signing off invoices in an electronic manner).

Ill-Prepared

Another similarity with HR practices discussed above: participants expressed that staff did not always feel that managers were supportive. It was difficult to say when you were struggling to manage the physical, emotional and cognitive demands of the work. At the same time, managers were perceived to be ill-prepared to provide support (emotional and operational) in the work-from-home environment. The concept of flexible work was new to managers as employees had to manage children and other home demands with their work. This finding was not reflected in online media.

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[8]https://www.thesouthafrican.com/news/university-of-cape-town-uct-level-3-lockdown/

Respond

Reconfigure Academic Year

When President Cyril Ramaphosa declared a state of national disaster, the media reported that universities were compelled to shut their doors and postpone classes and graduation, however, some universities advocated for *"business as usual."* and for the academic year not be affected.

> "All classes, tests, laboratory sessions, practical and experiential learning activities will continue as normal. As the week of 16 March is the start of our second term, students are encouraged to make a special effort to attend all academic activities."
>
> News24, 16 March 2020, Azarrah Karrim and Alex Mitchley[9]

Petitions to close universities, resulting in the postponement of face-to-face classes in higher education, raised many concerns with regard to the 2020 academic year. In response to the chaos and uncertainties, especially among the public, a COVID-19 departmental task team was established by the Minister of Higher Education and Training which consisted of vice-chancellors and the SA Union of Students. Discussions on a possible reconfiguration of the academic year were held, with solutions such as online teaching being at the top of the list.

> "A common reopening date, online learning and reconfiguring the academic calendar to align it with that of the northern hemisphere — these are all possible scenarios for SA tertiary institutions dealing with the fallout from the Covid-19 pandemic."
>
> Sunday Times, 6 april 2020, Sisanda Aluta Mbolekwa[10]

> "Universities around South Africa are getting ready to resume the academic year next week. Only this time, students won't be flooding back to campuses after a lengthy vacation. Instead, online teaching and learning has been touted as the top solution to save the academic year in the midst of the Covid-19 pandemic and the extended lockdown period."
>
> Daily Maverick, 17 april 2020, Sandisiwe Shoba[11]

Risk-Based Plans

News24 reported that a "risk-based plan" was presented to all members in Parliament, which detailed the department's plans to save the academic year. As South Africa anticipated the shift in lockdown levels, moving from Level 4 to Level 3 of lockdown, plans for the opening of universities were initiated.

> "From 1 June, all institutions will be offering forms of remote multimodal flexible teaching and learning, supported by approved resourced plans."

> "Under Level 4 of lockdown, the strictly controlled phased-in return of final year undergraduate students in programmes requiring clinical training begins, with MBChB students having been the first, from 11 May."
>
> News24, 14 May 2020, Jan Gerber[12]

> "At universities – under Levels 3 and 2 – groups of undergraduate and postgraduate students would be phased in. Under Level 1, all students would return to campuses, with physical distancing and health protocols still in place."
>
> News24, 23 May 2020, Nicole McCain[13]

Impetuous Strategies and Practices

In contrast to the administrative inequalities and management's ill-preparedness described by the research participants, some universities actively responded to the COVID-19 pandemic, i.e., the University of KwaZulu-Natal (UKZN) launched a health 'war room' *"to lend a hand in the fight against the global outbreak of the novel coronavirus."*

> "the 'war room' will provide the necessary evidence and guidance to effectively respond to COVID-19, and this may include a policy of quarantine, including self-quarantine, in all possible cases of exposure..."
>
> News24, 3 March 2020, Canny Maphanga[14]

Universities advised that should a student test positive for COVID-19, the university will not test all students, instead students were asked to self-isolate at home. Students were encouraged to follow all hygiene practices to stop the spread of the virus.

Complex Domain

The complex domain is characterized by unpredictability and change, where cause and effect are only understood in hindsight. Both the online media and the CAE findings revealed that HEIs became accustomed to the 'new normal' which entailed changing the ways of doing things and plans day-to-day. The sub-themes that manifest in the complex domain include wicked problems, surveys to students and staff, confliction and dismay. Multi-skilled task forces describe the action taken in this domain.

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[9]https://www.news24.com/news24/southafrica/news/coronavirus-some-varsities-shut-doors-others-wait-following-ramaphosas-address-20200316
[10]https://www.timeslive.co.za/news/south-africa/2020-04-06-covid-19–universities-consider-reconfiguring-academic-year-to-match-that-of-northern-hemisphere/
[11]https://www.dailymaverick.co.za/article/2020-04-17-universities-gear-up-to-save-the-academic-year/

[12]https://www.news24.com/news24/SouthAfrica/News/blades-plan-to-save-the-academic-year-20200514
[13]https://www.news24.com/news24/southafrica/news/lockdown-level-3-blade-nzimande-to-give-update-on-plans-for-tertiary-institutions-20200523
[14]https://www.news24.com/news24/SouthAfrica/News/ukzn-to-launch-health-war-room-to-help-with-fight-against-coronavirus-20200303

Probe

Wicked Problems

The CAE findings revealed that wicked problems were experienced. These included the work-life balance experienced by staff and changes related to research practices.

The participants reflected on the difficulties associated with *working from home*. The participants expressed that they found it challenging to manage their work responsibilities and the responsibilities related to their home life, all while working from home. The CAE findings revealed that the *increase in workload* and the expectations from those in management and leadership positions were experienced as strenuous by the participants. This was compounded by the rapid turnaround of providing feedback and information to and from management, which was further amplified by having to cope with home input (i.e., childcare, elderly care, looking after a sick family member, job and other losses).

Furthermore, as the pandemic lockdown continued and social distancing became the 'new normal', *research practices* needed to change. Participants indicated that qualitative data collection needed to be shifted into the online space, with subsequent changes to ethics clearance. Interviews were slightly easier, whilst focus groups proved difficult. Neither researcher nor participants seemed entirely clear on what needed to happen. Participants experienced that using online methods for data collection was different, and that the 'who' and 'how' of research sample groups had changed.

Surveys to Students and Staff

In an attempt to understand student's experiences of remote learning, the online media revealed that one university administered surveys to undergraduate and postgraduate students. This initiative aimed to understand how the COVID-19 pandemic is impacting on students' living experiences and to ascertain the adequacy of university interventions to support students during the COVID-19 pandemic. In the light of the profound socio-economic differences and the digital divide, the University of Cape Town states that:

> "the survey results underscore the many daily difficulties that students face in learning remotely, with those who left residences at short notice in March particularly affected (fortunately, some of these students have been able to return to residences for the second semester)."
>
> University of Cape Town, 05 August 2020, Nadia Krige[15]

An understanding the daily challenges experienced by students creates an opportunity for universities to adopt a targeted approach to alleviate some of the stressors experienced. The survey results revealed the following challenges:

Challenges include finding a quiet space at home to study, carving out uninterrupted time in between caring for children or other family members, and technology and internet access issues. Interrupted electricity supply also looms large, with some areas suffering intermittent power cuts even before load-shedding resumed countrywide.

The student survey provided valuable feedback for the improvement of course content, structure, support and assessment in the third and fourth terms.

University of Cape Town, 05 August 2020, Nadia Krige[16]

Sense

Conflicting Needs

CAE participants felt torn between polarized needs, with no known solution for correctly dealing with the problems. One such case was finding the balance between *business continuity vs academic continuity*. As one participant stated: "The #feesmustfall helped us to get the business continuity in place, but this did not necessarily touch on long-term academic continuity." Specifically, business continuity plans seemed to be more geared towards academics than students, for instance processes were implemented for academics to obtain laptops, data dongles, and access to training for online learning and teaching. However, most students were not equipped with resources nor did they have conducive spaces to study from home.

Another conflicting need was phrased at the *health vs wealth* debate. Participants experienced a constant demand for performance, producing more with less, and needing to adapt to very challenging circumstances in order to comply with the #nostudentleftbehind campaign. Yet, this came at the cost of mental wellbeing and coping resources of staff. Employees felt that there *"wasn't space or grace for difficulties"* that they were dealing with, whether it was health, well-being or financial concerns.

Dismay

A further significant impact of the COVID-19 pandemic on Higher Education institutions resulted in the postponement, cancelation or virtual graduation of students. This created a degree of dismay and frustration with many students.

> "Graduation is a huge milestone in the academic journey. It's a culmination of the years you worked in university, and even before that in high school, when you tried to achieve good marks so you could apply to do the degree that you want. When you get that degree, it's a really big achievement and graduation is a chance to celebrate that."
>
> Times LIVE, 05 april 2020, LWANDILE BHENGU[17]

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[15]https://www.news.uct.ac.za/article/-2020-08-05-survey-reveals-remote-learning-highs-and-lows

[16]https://www.news.uct.ac.za/article/-2020-08-05-survey-reveals-remote-learning-highs-and-lows

[17]https://www.timeslive.co.za/sunday-times/news/2020-04-05-degree-of-dismay-for-many-graduates-missing-ceremonies-over-covid-19/

A graduation ceremony is a highlight in the life of a student. It represents a celebration where students, parents, sponsors and all stakeholders participate in the success of graduating students, remembering the academic journey, the sacrifices made by family and loved ones and appreciating the support from lecturers and academia and often the huge sacrifice made by students themselves. This is especially true for students from previously disadvantaged dispensations.

Respond
Multi-Skilled Task Forces
It is recognized that the COVID-19 pandemic's infection rate and global spread impact on political, financial and social structures globally. Many universities rapidly activated disaster management committees, devising plans to counter the pandemic's influence as best they could. It is the pandemic's very nature of uncertainty and the unexpected that expose the weaknesses and limitations, challenging these plans. As a result, the online media revealed that central Executive Centre university structures were established to integrate, coordinate and expedite decision-making.

> Typically, such a framework could converge in an Executive Centre (decision-making) or nerve centre, which should preferably be convened by the Vice-Chancellor, and include expertise in areas of scenario planning, project management, science (in this particular case it would be virologists and/or epidemiologists), communication, and institutional culture. In order for the Executive Centre (EC) to be effective and fast-moving (with urgency and robust thinking), it should be organised around multidisciplinary task teams, each with key responsibilities.
>
> University of the Free State, 1 June 2020, Prof Francis Petersen[18]

To enable these Executive Centers with robust thinking and urgency, multi-disciplinary task teams participated to ensure effectiveness. The Executive Center provides a vehicle to lead under crisis conditions. It enables the university to manage the academic project under longer-term lockdown conditions.

> Director of Research at the FHS and research task team coordinator, Dr Yolande Harley, said that following the outbreak of COVID-19 in South Africa and the subsequent lockdown, staff in the faculty received many requests for information about how research should be managed, how researchers could get involved with COVID-19 projects and the "rules" around COVID-19 research in particular.
>
> University of Cape Town, 24 april 2020, Niémah Davids[19]

Furthermore, according to the online media, the University of Cape Town (UCT) established a special COVID-19 Research Task Team to serve as the official voice for COVID-19 related research projects, including other interrelated functions in the Faculty of Health Sciences (FHS). The task team is led by the Faculty of Health Sciences Deputy Dean of Research and also includes senior academics in the fields of infectious diseases, human biology, medical virology, public health and family medicine. The task team endeavors to support researchers with COVID-19 projects and the unique 'rules' applicable to COVID-19 research specifically.

Complicated Domain
The complicated domain is characterized by cause and effect, but where there might be multiple correct answers. The decision model is therefore to sense, analyze, and respond. This requires expertise to choose the appropriate answer (i.e., good, rather than best practice). In the findings, the sub-themes that populate this domain include online technology/best solution, experts in online learning show the way, exploring academic/industry partnerships, and African experts offer solutions for education, health and systems.

Sense
Online Technology/Best Solution
Higher education institutions familiar with online teaching and learning shifted to online fully, fairly swiftly, by employing the necessary tools, teaching practices and requirements for online learning. In these cases, the impact on students resulted in much less disruption to continue with their academic programmes. Contrary to this, those institutions who were much less prepared for online teaching and learning struggled to upskill academic staff and students, and at the same time needed huge investment in technology to effect the change to online learning. According to the media findings, online learning requires more than technology and software tools. It demands collaboration, care, preparation, expertise, resources, and learning lessons.

> 'Four conclusions are worth consideration: Higher Education institutions' agility to effectively adapt to change is contingent on change management skills, preparedness for crises, a sensitivity and willingness to collaborate, offer care and support to staff and students, and lastly, an innovative yet cautious attitude towards employing new and untested educational technology."
>
> The Conversation, March 12, 2020, Shandell Houlden and George Veletsianos[20]

Experts in Online Learning Show the Way
As it became apparent that technology mediating solutions seem to offer the best solution in current conditions, the data from the CAE indicates *experts were consulted*. Some academics were skilled in online learning and teaching and were used as

champions to assist other staff members. The University's center for innovative education and computer technology was also very helpful in providing on-demand training. From the research perspective, some staff with expertise in online research methodology were able to share experience and knowledge via webinars. Furthermore, health researchers shared information and good practice on hygiene practices (i.e., sanitization, hand-washing, etc.) for those who needed to return to campus.

Similarly, media reports indicate that universities communicated hygiene requirements for staff and students to follow. These measures included social distancing recommendations, deep cleaning, suspending the use of biometric access control systems with access card systems, and providing hand sanitizers at all access points. Also, contact tracing and communication with the family of infected students and staff are imperative to delay the spread of the COVID-19 pandemic.

In response to the pandemic, and taking lessons learned from China, it was evident that stringent hygiene practices is one of the preventative measures in dealing with the spread of the pandemic (WHO, 2020).

Analyze
Academia/Industry Partnerships Explored
Politicians engaged, seeking to partner with banks, specially to support the missing middle students.

> "Nzimande said he has begun looking into partnerships with banks to provide loans for those students at the beginning of the academic year. He said the engagements were ongoing. In the interim he recommended students look for loans from banks."
>
> TimesLIVE, 30 april 2020, TimesLIVE[21]

Minister Nzimande's aim is to avail students access to student loans. Furthermore, the minister considered how to overcome the barrier to supply students with technology and devices. His concern was that demand will outstrip supply and suppliers will not be able to deliver on the required quantities needed. The solution might be to distribute laptops in phases over time. The department of Higher Education will also work with network providers to supply students with data.

Respond
African Experts Offer Solutions for Education, Health and Systems
In an effort to combat the pandemic, universities themselves have responded to the COVID-19 pandemic in various ways. On the African continent, there have been a number of initiatives to find solutions to manage and combat the COVID-19 pandemic. Ibrahima Gueye, a professor at the Polytechnic School of Thies in Senegal and one of a 12-member team, said:

> "Africans must find their own solutions to their problems. We must show our independence.[22]"

This sentiment has been echoed across the African continent, where medical equipment and supplies are typically imported. A biomedical engineer Bilisumma Anbesse is a volunteer in Ethiopia upgrading and repairing old ventilators. Due to high demand their order for 1,000 new ventilators has been delayed. In Dakar, Institut Pasteur is working with the British biotech company Mologic to develop a rapid test for COVID-19. Also in Dakar, workers are producing 1,000 face shields per week using laser cutters. In Zimbabwe, alcohol-based hand sanitizers, face masks, gowns and aprons are manufactured. Drone technology is employed in Ghana to distribute vaccines and other medical equipment to remote parts of the country.

Nigeria's President Mr. Buhari is quoted:

> "This is a global pandemic: 210 countries and territories across the globe are affected, we cannot expect others to come to our assistance. No one is coming to defeat this virus for us."
>
> AP News, 11 May 2020, CARLEY PETESCH[23]

In South Africa, universities have engaged in a range of initiatives to support the Government's efforts against the pandemic:

Herkulaas Combrink of the Centre for Teaching and Learning at the University of the Free State (*University of the Free State, June 22, 2020, Andre Damons*[24]) has been working with colleagues to create evidence-based tools to assist provincial and national decision-makers with scientific information regarding the COVID-19 pandemic. The project includes a provincial database for screening and monitoring, and a data pipeline and assembly of hospital information.

Engineers at Wits University have designed protective face shields that can be produced in 3 min. These face shields are delivered to hospitals directly in an effort to alleviate the personal protective equipment (PPE) shortages in Gauteng (*Business Insider SA, 08 april 2020,* Jay Caboz[25]).

The University of Pretoria's Data Science for Social Impact research group has devised a databank with factual information enabling users' access to real-time updates regarding the COVID-19 pandemic. The ABSA Chair of Data Science at the University of Pretoria, Dr Vukosi Marivate, explains the purpose of the project. He elaborates:

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[21]https://www.timeslive.co.za/politics/2020-04-30-no-contact-teaching-at-universities-but-department-launches-ambitious-online-plan/

[22]https://apnews.com/article/virus-outbreak-international-news-africa-europe-dakar-66e8d6229ce8cfa535c3db2e821e7753
[23]https://apnews.com/article/virus-outbreak-international-news-africa-europe-dakar-66e8d6229ce8cfa535c3db2e821e7753
[24]https://www.ufs.ac.za/templates/news-archive/campus-news/2020/june/government-uses-some-of-the-best-available-minds-to-help-with-covid-19-models?NewsItemID=319
[25]https://www.businessinsider.co.za/wits-engineers-designed-a-face-shield-that-can-be-made-in-3-minutes-to-help-hospitals-covid-19-2020-4

"Once the minister of health and the NICD started publishing their data only in statements, we thought about how other researchers may need to get hold of this information in a more accessible way. As such, group members and collaborators have worked to build tools to automate the data gathering and cleaning as much as possible. Validation is also done through discussions about errors and rectifying them as soon as possible."

University of Pretoria, 07 april 2020, Masego Panyane[26]

Their aims are to use data science to seek solutions to social problems, allowing end-users and decision-makers to better understand data science and its limitations.

Simple Domain

Linear causality and patterns of linear causality are known and well established in the simple domain. This is the realm of "known knowns", evident in the process of sense, categorize (as a process to organize and understand facts) and respond. Clear cause and effect relationships manifest as sub-themes, i.e., predict pandemic practices, systematic divide still evident and not so different to #feesmustfall.

Sense
Systemic Divide Still Evident
Some universities were better prepared to convert from face-to-face to online learning. Many believe this is the result of an historic legacy where previously disadvantaged universities have much catch-up to do and will require huge investment in technology and skills. Some debates in the media highlight the differential by calling for a national and institutional strategy as opposed to a polarizing discourse of blame.

A heated debate is raging in the media and social media, arguing how the rush to "online" learning is going to leave students behind, "lead to failure" and that the move to online will deepen the inequality fault-lines between, and within our universities. We currently have a highly unequal higher education sector and there is a deep concern that the Covid-19 crisis will sharpen this.

DAILY MAVERICK, 03 May 2020, Suellen Shay[27]

Predict Pandemic Practices
As the COVID-19 pandemic reached South Africa, many other countries such as China and Italy had already experienced a surge in COVID-19 infections. By keeping an eye on pandemic practices and strategies in these countries, CAE participants experienced *predictability* in what could be expected in South Africa. For instance, it was expected that a lockdown would be announced based on the success this had in other countries. Having various experts at the university, those who experienced,

and were part of research teams for previous pandemics shared the process and necessary protocols.

The importance of research and research teams were emphasized in the media. Specifically, there was consensus among stakeholders that research investment is South Africa's best insurance policy against crises.

"The fact that South Africa has skilled researchers who are able to apply their minds towards solutions to the pandemic is testament to the country's research infrastructure. This is infrastructure that the government, particularly the Department of Science and Innovation, has been pivotal in funding and supporting."

The Conversation, 08 april 2020, Jabulani Sikhakhane[28]

Categorize
Not so Different From #Feesmustfall
Participants in the CAE reflected with pride that they were somewhat prepared for the COVID-19 pandemic, as similar arrangements of work from home and online learning were experienced during the #feesmustfall protests. As one participant stated: "We could navigate some of the processes that were required during this time."

Respond
Communication Used as Tool
In an effort to prepare most universities created an e-mail and hashtag where staff and students could make enquiries regarding the COVID-19 pandemic. A strategy of prevention is better than cure depends heavily on effective communication. Factual and well communicated information combats uncertainty and alleviates the stress caused by the unknown. Professor Nana Poku, UKZN Vice-Chancellor and Principal postulates:

"The threat of the new Coronavirus is compelling motivation why we, as a university, need to constantly be alert and put in place proactive and pro-response mechanisms to combat diseases and illnesses."[29]

DISCUSSION

This research aimed to reflect on, and make sense of the events at the beginning of the COVID-19 pandemic in South African HEIs. This sense-making attempt was guided by the graphic representation of the Cynefin framework, which utilizes recommended courses of action/strategies to explain the stages within each domain. These strategies include: probe, sense, categorize, respond and act. The depiction of the study findings on the Cynefin framework is presented as **Figure 1**. It is noted that models, such as the Cynefin framework, are designed to elicit self-awareness and to

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[26]https://www.up.ac.za/news/post_2886280-covid-19-up-research-group-sets-up-databank-to-empower-experts-and-citizens-with-accurate-info
[27]https://www.dailymaverick.co.za/article/2020-05-03-online-remote-teaching-in-higher-education-is-not-the-problem/

[28]https://theconversation.com/investing-in-research-is-south-africas-best-insurance-policy-against-crises-135706
[29]https://www.universityworldnews.com/post.php?story=20200307100555218

develop descriptive capability from which action can be determined through collective understanding. Therefore, the borders between the domains are fluid and represent an amalgamation of understanding bound in specific time and space (Snowden, 2000).

The findings from both the media and the Collaborative Autoethnography highlight the evolution of events, their requisite experiential aspects as well as the actual practices engaged in by staff and students within HEIs in South Africa. The graphic representation demonstrates this. At the heart and the start of the pandemic, everything was in disarray with dire inequities being exposed. The disorder was palpable and challenging to deal with for both staff and students.

The findings in the chaotic domain highlighted an *act > sense > respond* configuration. In other words, this tumultuous situation invoked immediate actions like remote learning and some HEIs attempting to return to campus. In line with the Cynefin framework, directive leadership is needed in this domain. The actions reflect such directive leadership, i.e., reconfiguring the academic year, developing risk-based plans and designing some impetuous strategies. Only once actions were taken, it was sensed that there was a lack of preparedness and it was evident that South African HEIs were confronted by extensive inequities once again.

Whilst this is what was reported in the media, the unbridled experience of those within Higher Education provide a narrative of the traits of the chaotic dimensions where there are no answers and many "unknowables". The data from the CAE seems to point in the direction of needing to change established ways of working. The situation thus demanded a rethinking of how university staff functioned and necessitated a new way of being in the world of work. The lack of fit-for-purpose strategy led to unstandardized approaches as it relates to human resource management of leave, re-skilling and decisions about no-work-no-pay approaches. Whilst directive leadership was shown to initiate a work-from-home scenario for staff, the difficulty experienced for a small group of executive leaders in HEIs to collect information and make decisions quickly regarding the details of this approach became difficult (Lawton-Misra and Pretorius, 2021). This ushered in a need for a more collaborative style of leadership that became evident in the complex domain (Fernandez and Shaw, 2020). Lawton-Misra and Pretorius (2021) argued that self-awareness, compassion, empathy, vulnerability and agility are essential leadership characteristics to navigate through the crisis. With this being said, it should also be noted that it is not only leaders who have to change their approach, but followers (as self-leaders) also need to adapt their approach.

The complex domain, known for being the space of emergent practice gave rise to innovation and collaborative attempts to create some semblance of order. The probing in this domain indicated the experience of wicked problems experienced by the academics at a South African university. Wicked problems, such as issues related to working and studying from home, and a sharp increase of academic workload were pervasive in this domain. This led to emotional strain for many, as they were dismayed at the circumstances and felt conflicted by opposing needs. It is clear that the traditional way of doing and thinking were no longer effective, and new practices had to be established. The pandemic crisis required relinquishing control in favor of more collective leadership approaches (D'Auria et al., 2020). To this extent, the findings indicate multi-skilled task forces, some in the form of Executive Centers, were formed to collaboratively propose solutions for the way forward. This is an example of adaptive leadership, where educational leaders need to be prepared to modify or reject strategies with immediacy, if required (Marshall et al., 2020).

The complicated domain presented the quest for best practices, and experts, from various disciplines, were engaged to help. Although technology mediated learning and communication methods were not without problems, these were found to be the best solutions to support the social distancing requirements of the COVID-19 pandemic. In this regard, those with expertise in online learning provided advice and solutions, and were used as champions to help others. It was also recognized that HEIs are not able to solve the problems on their own, and hence partnerships with industry were explored to assist with, for instance, funding and laptops. A positive component that surfaces in this domain is the recognition and appreciation of African solutions. This rise in an Africentric approach, in line with that advocated by the African Union, calls for "African solutions for African problems" (Fiquremariam, 2008). The ability of Africans to develop solutions for online learning, ventilators, drones, creation of face shields and information technology solutions show what Nathan (2013) describes as self-reliance, responsibility, pride and ownership as Africans.

In the sense-making process, little evidence was found to populate the simple domain. This is to be expected due to the uncertainty and lack of order experienced at the beginning of the COVID-19 pandemic. What helped the university staff in our sample was to look at the pattern of Covid-19 infections in countries such as China and Italy, in order to predict patterns of what is likely to happen in South Africa. Various researchers situated in HEIs had previously helped to manage pandemics, including HIV/AIDS, and were able to normalize the pandemic protocol. The importance of communication in this domain echoes Calonge et al. (2021) research who employed the Cynefin Framework in Higher education to investigate the suitability of communication strategies for the COVID-19 pandemic. These authors emphasize the importance of social media to communicate with all stakeholders, the challenge to communicate complex issues to diverse audiences, the importance of accurate time-critical information, the importance of students' involvement, and the imperative of trustworthy, consistency, positive messaging and empathy.

The prior experience of South African academics, having experienced work from home and other business continuity practices during the #feesmustfall protests, felt some sense of comfort in the similarity of approach, although it differed in many other regards. However, Sosibo (2020) argues that prioritizing remote teaching and learning needs after the #feesmustfall movement would have better prepared HEIs to respond to the Covid-19 pandemic. The unfortunate realization

in this domain is that the systemic divide in South Africa is still present. This makes the current situation with HEI's more challenging on many levels. Thus, while linear causality and patterns of causality characterize this domain, the nature and the uniqueness of this pandemic highlighted the established pattern of systemic divisions.

Lessons Learnt

The first lesson learnt was the importance of working through a sense-making process. For the participant-researchers involved in the CAE session the discussions provided an opportunity to share experiences and emotions, as well as a framework for deciding on next steps. It is therefore recommended that such reflective debriefing processes should be followed in departments and faculties as HEIs prepare for a return to campus.

Another lesson learnt is that people demonstrated resilience during the COVID-19 pandemic (although this is only evident in hindsight) and HEIs were able to adapt quickly. Whilst many universities were still thinking of blended and online learning approaches, the COVID-19 pandemic fast-tracked learning and the execution of remote emergency learning and online learning by a number of years (Srivastava, 2020). Academic staff demonstrated resilience by fast-tracking online teaching and learning, administrative staff adapted by employing online processes, and students adapted by upskilling and using laptops and software to facilitate learning.

Collaboration and team efforts are key factors in succeeding during a time of crisis. This was especially evident in the complex domain. However, one component that was missing in the media findings as well as the CAE, was collaboration between and across HEIs. From the approach of global citizenship, where networking and collective efforts are pivotal to seeking universal solutions, there may have been many opportunities where HEIs could have pooled resources and expertise to advance South African (and possibly African) Higher Education collectively. Buitendijk et al. (2020) argue that global cooperation is needed to rethink higher education and research.

Leaders and self-leaders should change their approaches to work and working with colleagues. Social norms have changed as staff have grown accustomed to online modes of interaction. During online modes of interaction, staff are accountable to deliver on quantifiable outputs within specified timeframes as opposed to face-to-face modes of interaction where the norm is often defined by time spent at the office. Student and staff well-being, and especially mental health during lockdown, has become another important factor. Advice and information on the pace of work and study routines, staying in regular telephone or video conferencing contact with family and friends, exercise, and a work-fun balance are all imperative to sustain health and productivity during the lockdown period.

In conclusion, HEIs need to take care when reintegrating staff and students on campus. It would be important to have a clear return-to-work strategy, with the necessary emotional and social support offered to students and staff.

Limitations and Recommendations

One of the major challenges in conducting this study related to the rapidly changing nature of the pandemic. Information became obsolete very quickly with changes on many levels occurring rapidly. With the rapid review, the information had to be gathered at a fast pace from all print media. Furthermore, the online media may not have provided a comprehensive picture of the events that took place during the initial phase of the COVID-19 pandemic. In addition, the lack of inclusion of institutional documentation such as protocols or policies that address the COVID-19 pandemic is a challenge. Whilst this would have provided insight on how South African HEIs made sense of the COVID-19 pandemic from the institutional perspective, these policies did not exist or are only in development as HEIs navigate the unprecedented and unpredictable nature of the COVID-19 pandemic. It is recommended that future research be conducted that reviews institutional documentation to identify how institutions made sense of the COVID-19 pandemic. Nevertheless, the final analysis and incorporation of the CAE process granted the researchers the opportunity to distil the information into a meaningful picture.

The expertise of the research ranged from novice to established researchers. A few of the researchers were from SubSaharan African countries and a few challenges arose in terms of connectivity. This essentially contributed to fewer researchers being involved in the data collection process over quite a compressed period of time.

The CAE component of the study was conducted at one university only, making the conclusions very specific to that institution. However, there may be issues that other institutions will be able to identify with and draw on the lessons learnt from the studied institution.

CONCLUSION

The start of this project coincided with the start of the pandemic, whilst the concluding collaborative autoethnography group session came at a time when return to campus was considered. Thus, this paper offers valuable insights to both ends of the spectrum as it highlights the evolution of processes taking place at multiple levels from government policies to institutional practices, as well as to how this impacted on both staff and students. The Cynefin framework demonstrated a range of sense-making efforts from the disordered domain, revealing that HEIs were in disarray, vulnerable and faced many uncertainties; to the chaotic domain which reflected inequalities, change in ways of working to trying to reconfigure the academic year. The complex domain revealed that HEI's became accustomed to the new normal by dealing with wicked problems, to eventually relying on expert assistance to navigate the virtual university space reflected in the complicated domain. Finally, trying to establish causality in the simple domain proved challenging as the information available during the time was sparse.

Despite these challenges, the study underscores many important lessons for HEI's. For example, the importance of the sense-making process among all academic staff. Collaboration and team efforts were found to be critical to managing the Covid-19 crisis period. Given the immense disparities exposed by this pandemic, it is in the best interest of all HEI's to pool resources and expertise. In this way, all can benefit and possibly achieve the aim of #leavenopersonbehind.

Lastly, the study provided some insights regarding the usefulness of employing a rapid review by facilitating knowledge synthesis within a time sensitive phenomenon. This process also enabled the effective and efficient identification of evidence to support the research. Furthermore, the Cynefin framework demonstrated the practical use of this method where sensemaking of complex events prevail. These insights provided real-time guidance for appropriate action and to mitigate risk accordingly. The study assists to provide an understanding of how these methods benefit research, theory and practice.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University of the Western Cape Human and Social Sciences Research Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

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Proceedings of the Brazilian Academy of Dentistry Sponsored Symposium on New Perspectives on Dental Education—9/24/2021

Brazilian Academy of Dentistry[†]

Rio de Janeiro, Brazil

To create a forum to facilitate further discussion, the Brazilian Academy of Dentistry organized an international symposium to discuss the experience of having to deal with dental education during the implementation of public health measures to mitigate the spread of SARS-CoV-2 in schools in Brazil, India, Portugal, Sweden, and the United States. An additional goal of the symposium was to discuss the need of continued faculty development. Therefore, the aim of this paper is to summarize these discussions.

Keywords: dental education, higher education, COVID-19, online and higher education, distance learner

INTRODUCTION

Virtual or online learning in dentistry has been suggested as an alternative or complementation to traditional in-person didactic activities due to the diversity of tools now available for online learning. One of the main drivers motivating the proponents of online learning in dentistry is an increasing worldwide shortage of clinical academics to teach dental clinicians in the future (Schönwetter et al., 2010). Concerns with the growing online content being developed for replacing in-person dental education have been voiced since individual learning styles and preferences vary considerably (Divaris et al., 2008) and the coronavirus disease 2019 pandemic precipitated the implementation of online dental education around the world. Generally positive outcomes have been reported in many countries, such as South Korea (Herr et al., 2021), Romania (Iurcov et al., 2021), Germany (Schlenz et al., 2020), Croatia (Badovinac et al., 2021), and Italy (Varvara et al., 2021), but less favorable impressions related to student's satisfaction in China (Wang et al., 2021), Turkey (Avunduk and Delikan, 2021), and Pakistan (Sarwar et al., 2020). The need for faculty development in Italy (Varvara et al., 2021) has also been reported, suggesting that a deeper discussion regarding the trend of moving at least some portion of dental education to an online environment is warranted.

GOAL OF THE SYMPOSIUM

To create a forum to facilitate further discussion, the Brazilian Academy of Dentistry organized an international symposium to discuss the experience of having to deal with dental education during the implementation of public health measures to mitigate the spread of SARS-CoV-2 in schools in Brazil, India, Portugal, Sweden, and the United States. An additional goal of the symposium was to

discuss the need of continued faculty development. Therefore, the aim of this paper is to summarize these discussions.

THE IMPACT OF COVID-19 ON DENTAL EDUCATION IN DISTINCT GEOGRAPHIC LOCATIONS

The aim of this discussion was to describe the implementation process done in Brazil, India, Portugal, Sweden, and the United States to continue to provide timely dental education. This section summarizes a reflection done by each speaker on what was the experience in each of their locations. It was expected that similarities and differences would emerge, despite the differences between countries and cultures. Three guiding questions were proposed for the panel and the summary of answers related to each country experience is included below.

1. How did the covid pandemic affect the undergraduate dental education?

In the United States, dental schools had clinics closed typically between March and June of 2020, and didactic teaching started to be delivered online from March on (Peres et al., 2020). Laboratory (pre-clinical) courses returned in June 2020 with clinical activities, following more strict protocols to mitigate risks of transmission. In-person didactic classes only returned in September 2021. These changes obviously impacted daily activities of schools and a decision was made that the dental school accreditation process, which is done by the Commission of Dental Accreditation (CODA) was postponed 1 year (for accreditation purposes, schools in the United States are evaluated every 7 years).

In Sweden the campus of Karolinska Institute went to lockdown in March 2020. All didactic activities started to be done remotely through a web-based platform. Course examinations, however, were done on site. Clinical activities were extended to the months of June and August. Resuming clinical activities included screening patients and observing use of personal protective equipment, physical distancing, and hand hygiene. At Malmö, the dental school was closed until the end of the spring semester and all clinical activities were canceled. All didactic activities were done remotely through a web-based platform. Examinations, both written and oral were done remotely. Small group discussions of clinical cases were introduced. Clinical activities were resumed in the Fall of 2020 and Spring 2021 observing physical distancing and personal protective equipment. Students started to work in pairs with a single patient. The clinical case-based discussions continue to be done to this day.

The experience at the campus of the Instituto Universitario Egas Moniz in Portugal was as follows. Activities stopped 9 March 2020, and the program was adapted in a week to begin social distancing (restarted virtually March 16). Clinical care was interrupted March 11 in the whole country. The school was already working on an online platform since 2019 for didactic purposes and the transition was less

challenging. Final examinations for senior students were made more flexible. Traditional activities with the students (research week) were suspended.

In India, no treatments were offered, other than emergency treatments, with the introduction of updated safety guidelines. Dental schools closed around the country in March and stayed closed until October. Education was at least partially offered online and there was no clinical exposure in the meantime.

In Brazil, in the case of one private school, the didactic program was offered virtually starting March 16 (4 days after the decision of interrupting in-person activities) and clinical care was interrupted, returning August 2. September 14 marked the return of in-person activities with graduation on December 18. The graduating class did not miss any content hour. 2021 restarted as planned originally with in-person activities, with the option for didactic learning done virtually until the second semester when all activities returned to be in-person. This experience was not in line with most schools in Brazil (Peres et al., 2020), which had clinical activities interrupted for more than 1 year, and in many instances, only a portion of didactic courses being offered online.

2. What adjustments were made to maintain clinical, scientific, and educational activities at the undergraduate dental school?

In the case of the University of Pittsburgh School of Dental Medicine in the United States, didactic teaching (live and recorded lectures) were resumed after 1 week of interruption. Exams were done remotely with an emphasis on the honor code. Pre-clinical teaching resumed after 3 months with virtual demonstrations. Clinical activities also resumed after 3 months, with adapted clinical protocols and masks were worn by each student, clinical staff, and faculty. Case discussions were introduced and while waiting for the return, students were offered access to professional-level courses (continued education credits).

In Sweden, the Karolinska Institute had in-person activities limiting the number of people involved, both in the clinics and pre-clinics, and groups were smaller than usual. At Mälmo, they did not relax the requirements originally described in course syllabi. That meant some activities were postponed to the following semester but never canceled. It was observed that teaching materials developed for remote activities were improved and had better quality and content.

Students and faculty regret that final examinations and graduation could not be done in person ("that was no closure").

In Portugal, activities restarted 11 May at the campus of the Instituto Universitario Egas Moniz, with pre-clinical activities, and 25 May clinical care returned. Video tutorials were created to orient students for clinical activities. New protocols for personal protective equipment use were introduced. Individuals were pre-screened before entering facilities. Students used to work in pairs, started to work in trios. Spacing in the clinics was enforced, and final exams were postponed 1 month (from June to July). Exams were done virtually (online).

In India, online lectures were improved overtime to make content more attractive and problem-based learning strategies

were used more often. Special attention to content was given and return to lecture halls happened while keeping physical distancing.

In Brazil, the experience of one private school was that they returned the clinical activities with safety protocols in place. Didactic videos were created to orient students for their return to the clinics. In-house physical barriers were utilized (Montalli et al., 2020, 2021). Few cases of covid were recorded.

There was an emphasis on faculty development for more effectively using online tools. It was also identified a need for expanding emotional support for students.

3. Which evaluations can be made on the results of these adjustments, that influenced the quality achieved in professional training in Dentistry?

At the University of Pittsburgh School of Dental Medicine, like the other schools in the country, the fourth-year class graduated successfully, with students completing for the most part their requirements. There was no record of a single case of COVID-19 transmitted in the clinics. The incoming class was also recruited successfully, suggesting the disruptions due to COVID-19 had little to no impact. There was, however, a detectable impact on students. Some selective courses were not offered and there were less clinical chairs being used due to protocols of physical distancing. Anxiety was reported due to the concern of the possibility of not graduating on time, being not competent to practice at the time of graduation, the ever-changing safety protocols, low numbers of new patients, and the fear of contracting the disease were sources of stress. There was a perception that the didactic experience was better than anticipated, while some students may have had less clinical experiences and a higher than usual number of students had to complete requirements over the summer after the end of the term.

Clinical production was improved because students started to work faster and at-four hands. Overall, online didactic courses were well-received and clinical experiences were offered, but there was a toll on the students. There was a general sense that faculty and staff were for the most part helpful and accommodating. Changes forced the school to be more efficient and there was an increase in clinical revenue.

In Sweden, management was forced to reflect on how course material was offered and discussions with student representatives were ongoing. In general, students appeared to be satisfied with their learning experience. Faculty and staff have worked hard to promote the best experience possible for the teaching. An evaluation of examination results in the Spring is planned to try to identify the presence of any gaps in knowledge that may need to be addressed. For now, no evidence of any gaps was unveiled.

In Portugal, the school leadership was able to react promptly, and faculty, students, and staff were willing to accommodate to the new reality. There was already experience with using virtual tools and it was possible to continue with the teaching program without interruptions. Clinical activities returned promptly with revised safety protocols and very few cases of covid were recorded in the clinics.

In India, a recommendation of psychomotor training online with incorporation of self-assessment protocols was made. Self-assessment protocols appeared to be well accepted by teachers and students and were used.

In Brazil, the one private school incentivized the visualization of video didactic tools before coming to pre-clinical activities to improve performance started to be made. It was proposed a bigger emphasis from now on in implementing protocols for evaluations of teaching effectiveness. Faculty felt their positions were safe and that they received support in using teaching technology, particularly for course evaluations, which were thought to be the most challenging. The admissions process to dental school was done virtually and successfully completed.

ADDITIONAL REMARKS

It was a major undertaken for faculty everywhere to become quickly familiar with online educational tools, so didactic content would continue to be offered while lockdowns were being implemented. It was hard for students as well, which although typically comfortable with technology, were not used to have large portions of content delivered online only. However, it was still not possible to provide the typical clinical experiences to allow students to fully apply the knowledge gained from the didactic course work. The perception from students was that they were not fully prepared to start treating patients in their school settings. It can be assumed that in many cases, students who were later in their training had their education handicapped.

It is likely that continuing education programs will have to supply some of that lost experiences for the recently graduated professionals. Overall, it appears to be true that continuing education needs to be a requirement for everyone throughout their careers.

After what happened between March 2020 and the beginning of 2021, it begs the question if online learning really worked.

Initially, teachers not familiar with online teaching having to use online platforms led to student disinterest in addition to higher levels of faculty frustration and stress. It was not uncommon the perception that faculty development and support was not widely offered. Online teaching requires training and appears better suited for a supporting teaching tool, or a tool to be used for training of individuals in remote areas.

The concern exists that the popularization of online teaching precipitated by COVID-19 may be used as justification for replacing in-person learning in dentistry. However, it appears that demand exists for remote learning, particularly from recently graduated professionals.

Every minute, 70 min of online content is posted at YouTube. That means that vast amount of information and disinformation are made available on a variety of topics. The consequence is figures such as 7% of Brazilians believing the Earth is flat, despite of the evidence that exists it is round. The way the message is conveyed by the "digital influencers" rather than the actual truth has become more important. This translates to dental education by the need to emphasize the ability to understand content, and critically think about it. Content offered online, at

the enclosed educational environment of a school, or in the open area of social media, should follow the same ethical principles and portray best evidence and best practices. Education should be more than informative, it should be transformative. Online tools allow for dissemination of information, but a question exists if they can be transformative. According to Paulo Freire, a worldwide recognized Brazilian educator (Díaz, 1921–1997), "education does not change the world. Education changes people. People change the world."

In summary, remote, or online education is not a substitute for in-person education. This period of public health measures against COVID-19 also suggested dental school programs may be revisited for content and delivery methods.

INFORMATION INCLUDED IN RESPONSE TO PEER-REVIEW OF THE MANUSCRIPT

Presenters described their experiences mostly at their home institutions, in which they are mostly familiar. The presenter from India chose rather to address the three posed questions without focusing in any particular institution. For the United States, the experience at the University of Pittsburgh School of Dental Medicine was described. The University of Pittsburgh School of Dental Medicine is one of the four dental schools in Pennsylvania, and 1 of the 66 dental schools in the United States. It admits 80 students every year and serves the western part of the state, which is located in the Appalachian region, one of the areas with the worse health outcomes in the United States (Vieira et al., 2015). For Sweden, the speaker contrasted two dental schools, Karolisnka Institute and Mälmo University, out of the four in the country. Sweden is considered a wealthy and very modern country and has just under 10 million inhabitants and most people are concentrated in the south of the country. For Portugal, the experience at Instituto Universitario Egas Moniz was discussed. Located just outside Lisbon, the Instituto Universitario Egas Moniz is one of the seven dental programs in the country and is relatively young, created with the goal of integrating with the local community. Finally, for Brazil, the experience at Faculdade de Odontologia São Leopoldo

Mandic was presented. Located in Campinas, in the state of São Paulo, the school is one of the more than 500 dental schools in Brazil. The dental curriculum in the different countries is expected to be similar, and one of the main differences between these countries is the pre-requisites to be accepted in dental school. In the United States, it is required a bachelor's degree in arts, sciences or both, whereas the other countries will not have this requirement. Hence, dental students in the United States are slightly older on average than dental students in other parts of the world. Also, the United States has in place an accreditation process that each dental school needs to undergo every 7 years to remain in activity. Conversely, Brazil has no oversight for its dental education programs and there is great variation on the quality of the education provided (Vieira and Castro, 2022).

It is assumed that the forced interruptions of the training during the surges of COVID-19 cases in the different countries have impacted all of them equally, with students having graduated having had less clinical experience than their peers of prior years, even if most of the planned course content was given.

AUTHOR CONTRIBUTIONS

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Schools' improvement capacity and responses to the COVID-19 pandemic: Evidence from schools serving disadvantaged communities

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The goal of this paper is to analyze the relationship between six different dimensions of school improvement capacity (*SIC*) and schools' efforts to sustain teaching and learning as well as student well-being during the first lockdown in the context of the COVID-19 pandemic. Based on data from 13 qualitative interviews with principals and data from a standardized teacher survey at schools serving disadvantaged communities in North Rhine-Westphalia, Germany (*N*=385 teachers), we assessed (1) the schools' level of *SIC* shortly before the lockdown, (2) their reported response to the lockdown with regard to sustaining student learning and well-being, and (3) similarities between the schools in terms of the combination of the level of *SIC* and the reported effort to address the challenges of distance learning. Our results suggest that two major groups of schools can be distinguished in terms of level of *SIC*. Furthermore, we identified a range of thematic clusters related to how schools acted during distance learning, each of which can be assigned to one or more dimensions of *SIC*. Finally, we identified four patterns, referring to different combinations of *SIC* and the schools' reported actions. The results indicate that schools with a higher initial *SIC* were more able to find flexible and pragmatic solutions in order to sustain student learning and well-being during distance learning. Our findings stress the importance of school improvement activities at schools serving disadvantaged communities in dealing with sudden challenges for teaching and learning, such as those encountered during COVID-19.

Introduction

The global outbreak of COVID-19 in 2020 has led governments around the world to enact measures in many areas of societal life aimed at containing the virus. In the wake of these measures, around 95% of the world's student population were affected by school closures (United Nations, 2020). In Germany, the majority of schools had to abruptly change from face-to-face teaching in schools to distance learning for the first time between March and April 2020. Because in Germany, the 16 state governments have sovereignty over primary and secondary education, and municipalities are responsible for the tangible equipment of schools, the regulations and overall conditions for distance learning across the country varied substantially: in some areas school buildings were completely closed, while in others, a small number of students were allowed to attend school under specific circumstances (e.g., emergency care and in-school instruction for children whose parents worked in "system-relevant" jobs). This first phase of distance learning in spring was followed by a series of further temporary school closures, as well as by phases of hybrid models in which students were divided into groups that were taught in rhythmic alternation of face-to-face and distance learning.

Bremm and Racherbäumer (2020) note that a major focus of the discussion around the consequences of COVID-19 in Germany has thus far revolved around a perceived lack in resources for distance learning of families and schools in marginalized contexts (van Ackeren et al., 2020; Middendorf, 2021). In contrast, there has hardly been any discussion around the macro structures of the system, as well as the organizational practices of schools as potential influencing factors of student learning and well-being under school closures (e.g., Klein, 2022). As a consequence, we know little about how processes and practices within schools, or their *school improvement capacity* (*SIC*), have shaped their responses to the sudden challenges for teaching and learning induced by the pandemic.

While numerous empirical studies from the Anglo-American context have repeatedly pointed to the importance of school capacity building for organizational learning (e.g., Seashore Louis and Lee, 2016), scant knowledge exists for the German-speaking context as to whether similar effects are at work. In particular, there has been very little research in Germany on how organizational practices of schools affected their ability to respond to crises.

The goal of the paper therefore is to analyze the relationship between different dimensions of *SIC* (shared commitment and collaborative activity, skills and knowledge, leadership, feedback and accountability, participative decision making grounded in teacher empowerment) and the way schools have responded to the challenges of distance learning in the context of COVID-19 with regards to providing instruction and sustaining student learning and well-being. Combining qualitative and quantitative data from schools serving disadvantaged communities (SSDC) in one German state, we aim to (1) assess the schools' level of *SIC* shortly before school closures, (2) analyze how and to what extent schools managed the transition to distance learning and sought ways to meet their students' needs, and (3) identify overarching patterns of response across the schools in relation to their *SIC*.

Theoretical and empirical background

School improvement capacity at schools serving disadvantaged communities

From an organizational theory perspective, schools can be seen as organizations, which means that their members perform tasks in a division of labor to pursue or fulfill a common purpose (Fuchs, 2004). Depending on the general conditions of the individual school, the goals and actions of the school actors may vary and lead to different school-specific organizational cultures (Schönig, 2002; Maag Merki, 2017). Consequently, the organization is not to be understood as a static entity, but is in a constant state of change depending on its members and conditions. For schools to form *learning communities* that are self-reflective and develop collectively, they require certain capacities (Argyris and Schön, 2018). In the past decades, research in the field of school effectiveness and improvement has highlighted various factors characterizing "effective" or "learning" SSDCs in the anglophone context (Muijs et al., 2004; Rutledge et al., 2015). From a theoretical perspective, such factors are presumed to enhance *SIC* (Maag Merki, 2017), which can be understood as "the capacity of a school to build internal school processes and structures in a targeted and systematic way so that school processes and the quality of teaching and student learning are sustainably improved (translated)" (Maag Merki, 2017, p. 269).

There are several theoretical approaches and models that define and measure school-wide capacity building. All of these explicitly or implicitly take the individual school as the frame of reference and presuppose that schools have a certain degree of autonomy (Feldhoff, 2011). One often cited and empirically validated model was developed by Marks et al. (2000). Referring to a school's "capacity for organizational learning," which can be understood as a collective process and means of increasing the problem-solving capacity with the goal to adapt and improve constantly (Marks and Louis, 1999; Maag Merki, 2017), the model consists of six dimensions: (1) school structure, (2) shared commitment and collaborative activity, (3) knowledge and skills, (4) leadership, (5) feedback and accountability, and (6) participative decision making grounded in teacher empowerment.

In Table 1 the six dimensions of *SIC* as described by Marks and Louis (1999) and Marks et al. (2000) are briefly outlined. In addition, Table 1 presents empirical findings from the German-speaking context related to the importance of each of the individual dimensions for school improvement in general and for organizational learning in particular.

TABLE 1 Overview of the six dimensions of *SIC* and empirical findings from Germany.

Dimension	Description	Research findings from Germany
School structure	Time, space, and personnel structures to enable learning communities (Feldhoff, 2011, p. 246 f.) and work toward a professional culture of continuous reflection and exchange	Institutionalized structures for collaboration can increase teacher collaboration and instructional development (Holtappels, 2002, 2019; Harazd and Drossel, 2011) School improvement committees enhance self-regulation and willingness to innovate / participation of teachers (Feldhoff, 2011)
Shared commitment and collaborative activity	Common goals and values among staff promoting school-wide collaboration (Feldhoff, 2011, p. 115) and generating organizational knowledge through the social processing of information	Professional teamwork among teachers is not significantly related to *SIC* when considered together with other school organizational characteristics, but teacher commitment and co-constructive collaboration are associated with *SIC* when considered together with variables related to the working culture of schools (Holtappels and Brücher, 2021) Cooperation among staff is positively associated with change of routines and instructional processes (Feldhoff, 2011) Teacher collaboration enhances student performance, job satisfaction (media-related) school improvement, and willingness to innovate (Gräsel et al., 2006a,b; Drossel and Eickelmann, 2020)
Knowledge and skills	Utilization of internal and external knowledge, encouraging open discussion throughout the organization (Marks and Louis, 1999; Starbuck, 1999) and further development of knowledge as well as the permeability of knowledge (Feldhoff, 2011, p. 120 f., 133)	Willingness to innovate promotes change and determines instructional quality (Holtappels and Voss, 2008; Holtappels, 2013) and enhances the change of routines and sustainability of projects as well as instructional processes (Feldhoff, 2011)
Leadership	Decentralized, facilitative leadership exercised at all levels of the organization (Marks and Louis, 1999, p. 714) to increase affective commitment to the school and its goals through the articulation and pursuit of organizational goals and visions (Leithwood et al., 1999, 2006; Klein, 2018)	Effective leadership enhances teachers' willingness to innovate (Feldhoff, 2011), teachers' affective commitment (Harazd and Ophuysen, 2011), teacher collaboration (Harazd and Drossel, 2011), instructional practices of teachers (Pietsch and Tulowitzki, 2017; Holtappels and Brücher, 2021), teachers' data use (Ercan et al., 2021) and the self-regulatory activity of schools (Feldhoff, 2011)
Feedback and accountability	Regular use of data from various information sources (Feldhoff, 2011, p. 135) to monitor and develop student learning based on locally meaningful standards (Marks and Louis, 1999, p. 715)	Teachers and schools only use little data for school improvement, and prefer internal data sources (Demski and Racherbäumer, 2017; Wenger et al., 2018) Perceived relevance and use of external data for school improvement varies (Ramsteck and Maier, 2015; Pietsch et al., 2016; Wurster and Richter, 2016; Behnke and Steins, 2017)
Participative decision making grounded in teacher empowerment	Involving teachers in key decisions and supporting their tasks and learning in and for the school to promote the school's problem-solving capacity and increase teachers' willingness to participate in school improvement activities (Leithwood et al., 1998)	Teacher participation enhances school's self-regulatory activity (Feldhoff, 2011) Effective SSDC apply participative leadership practices (Racherbäumer et al., 2013)

To sum up, schools as learning organizations have structures and routines enabling the educators to collaboratively and continuously learn at all levels (Silins et al., 2002). In their empirical study, Marks et al. (2000) found a statistically significant association between the schools' capacity for organizational learning, and instructional quality as well as student performance, controlling for a set of demographic and socio-economic variables. One attempt to adapt the model to the German context was provided by Feldhoff (2011). His research showed that (goal-oriented) leadership was associated with changed organizational routines as part of a school's self-regulation ability, which was mediated by both collaboration among staff, and teachers' willingness to innovate. Moreover, whether school projects were incorporated in the schools' routines and thus made sustainable was affected by the existence of participatory school improvement

committees. In addition, the perceived leadership skills of the principal were related to the structuredness and comprehensibility of instruction *via* teachers' willingness to innovate.

Building a school-wide *SIC* seems particularly relevant for SSDCs (Holtappels et al., 2017). In Germany, these schools are usually defined by being located in areas characterized by an above-average unemployment rate, an above-average proportion of social welfare recipients, and low educational qualifications and low social mobility among residents (Friedrichs and Triemer, 2008; Bremm et al., 2016). International research has demonstrated that socioeconomically disadvantaged communities are more adversely affected by crises not only because of fewer resources of residents, but also because of the quality of schooling provided to these communities, and the measures taken by schools to handle crises (Vasudevan and Campano, 2009; Barrett et al., 2012).

Compared to schools in more privileged locations, SSDCs in Germany tend to have a less favorable technical infrastructure (OECD, 2020), and research has identified a particularly large gap in digital competencies between socio-economically privileged and disadvantaged students in Germany (Senkbeil et al., 2019). Furthermore, students from disadvantaged communities tend on average to exhibit more difficulties in self-management and a lower level of metacognitive skills enabling them to learn independently and in open learning settings (Artelt et al., 2010; Bremm and Racherbäumer, 2020). These factors may constitute particular challenges for SSDCs in their response to distance learning, and in meeting educational standards as well as students' needs. Due to lower technological equipment as well as both actual and perceived deficits of students in terms of their digital skills and ability to learn independently, teachers at SSDC may be less able or even less inclined to use digital technologies and virtual formats during distance learning (Bremm, 2021). This may, in turn, lead to difficulties in staying in contact with the students in order to maintain educational standards and to address their emotional and learning needs. At the same time, the actual or perceived difficulties students face in their home environments during COVID-19 may lead to a lowering of educational standards at SSDC during distance learning (Bremm, 2021).

Connecting *SIC* and responses to the COVID-19 pandemic

The theoretical and empirical findings outlined above suggest that during crises, schools with a high *SIC* will not only be able to further develop existing strategies, methods, and approaches, but to also analyze the school's overall goals and, if necessary, adapt them to the new challenges (Maag Merki, 2017; Askell-Williams and Koh, 2020). Prior research has demonstrated that internal conditions are relevant for a school's ability to attend to the well-being of students and enhance educational equity during and after crisis. For example, in the United States, Barrett et al. (2012) followed up on students who had been forced to relocate after Hurricane Katrina and found that whether schools had created a milieu of collaboration and taken proactive steps to make sure the students' needs were addressed had a substantial effect on the students' well-being. Their findings showed furthermore that school leadership that promoted collaboration and consensus was related to the reduction of distress as well as the academic performance of Katrina-evacuated students.

SIC may also be important for managing shocking events, such as the sudden school closures during COVID-19. Ensuring learning and well-being for all students was one of the main challenges for schools around the globe during COVID-19. This is particularly true for SSDCs, because in these, the challenges posed by the external (and often internal) conditions of the schools tend to be perceived as higher than in other schools (e.g., Klein, 2016) even without the additional challenges of the pandemic.

However, the extent to which the discontinuation of face-to-face learning has affected and will continue to affect specifically students from disadvantaged communities is likely to depend on how distance learning was implemented in the schools (Andrew et al., 2020). In the context of COVID-19, evidence suggests that students were affected by the pandemic in heterogeneous ways. In a study from the United Kingdom, for instance, Andrew et al. (2020) demonstrated that differences in the learning time of secondary school students from more disadvantaged and more privileged families could be ascribed to individual and family resources *as well as* school practices. The authors showed that although differences in the total learning time did not increase during school closures, students from less affluent families had less access to active school support for distance learning, such as online classes, online video conferencing, and online chat. Variation in the provision of support accounted for one fifth of the gap in class learning time between the most and least affluent students. These results suggest that school support structures may constitute an important driver of inequalities in learning during school closures (Andrew et al., 2020).

Recent evidence from the German-speaking context suggests that especially SSDCs appeared to have difficulties in maintaining educational standards and providing opportunities for academic learning. In a study from Switzerland, Bremm (2021) showed that SSDCs deliberately lowered standards while increasing their concern for students' emotional well-being. In Austria, Jesacher-Rößler and Klein (2020) found that principals at SSDCs perceived distance learning as less positive. Although they emphasized the goal of securing academic standards, they also stated to a much greater extent than other schools that they had lowered academic requirements during distance learning. Furthermore, the results suggest that organizational capacities of the schools (such as collaboration between staff members, a systematic procedure for distance learning, and professional development) affected how well schools adapted to the challenges of distance learning.

Research questions

Based on the assumption that how schools responded to the challenges of the pandemic was contingent on their prior *SIC*, the goal of the paper is to analyze the relationship between six different dimensions of *SIC* at SSDCs, and the schools' efforts to sustain instruction and learning during the first phase of distance learning in the context of COVID-19. Drawing on the theoretical perspective of organizational learning as well as on prior evidence concerning the relationship between dimensions of *SIC* and schools' responses to crisis, we addressed the following research questions:

1. How did educators at SSDCs evaluate their schools' *SIC* shortly before the beginning of distance learning in the context of COVID-19?

2. What measures did schools develop to implement distance learning and ensure student learning and well-being during the initial phase of COVID-19?
3. Are there systematic patterns in the relationship between schools' initial level of *SIC* and their reported response to the first school closures?

Answering these research questions will allow us to assess the potential relevance of *SIC* in responding to crisis at SSDCs.

Study design

Project context

The data was obtained from a mixed-methods study designed to evaluate the model project "Talent Schools" in North Rhine-Westphalia, Germany. The model project was initiated by the States' Ministry for School and Education and aims at supporting a total of 60 SSDCs (15 vocational schools and 45 general education schools) through the provision of additional resources and the implementation of instructional concepts and strategies designed to enhance students' academic performance, as well as their linguistic and social competence. Each school had to apply for the project with a letter of intent declaring the school's willingness for school improvement and the envisaged activities. All types of secondary schools (*Hauptschule*, *Realschule*, *Sekundarschule*, *Gymnasium*, *Gesamtschule*) as well as vocational schools could apply. Only schools that were confronted with specific challenges due to their geographic location and a correspondingly diverse student body were chosen for the model project by a jury of experts, whereby the selection criteria were not made public. The schools received additional resources for personnel, professional development (PD), and mandatory school improvement consulting. In this context, the participating schools were obliged to develop or expand on a specific profile (STEM or cultural education). The evaluation of the model project was carried out through the University of Duisburg-Essen and the University of Siegen, and comprised the monitoring of the school improvement processes as well as the continuous feeding back of findings to the schools. Apart from this data feedback, the researchers were not involved in any school improvement activities. The 60 schools started in two cohorts on a staggered basis, the first in the 2019/2020 school year ($n = 35$) and the second in the 2020/2021 school year ($n = 25$).

Data source

To answer our research questions, we used a mixed methods approach combining quantitative and qualitative data (see Creswell and Plano Clark, 2018, for a comparable research design, see Duff, 2021).

Qualitative data source

To explore how schools responded to the school closures, the research team conducted 15 semi-structured interviews with the principals or leadership teams at selected schools in the first cohort of schools ($n = 35$). We selected our subsample of schools based on several criteria that ensured that the heterogeneity of the participating schools was reflected as closely as possible [school type, governmental district, chosen profile (STEM or cultural education)]. The interviews were conducted using a protocol that included questions about the general project context and challenges as well as strategies in dealing with COVID-19. As a first step, we scanned the transcribed interview material for central statements related to the schools' responses to COVID-19. The aim was to work out which topics and sub-topics were addressed in the interviews. Since not all interviewees sufficiently addressed their specific reactions the first school closures, we selected a subsample of 13 interviews in a second step which delivered information about how schools initially responded to the school closures. Orientation for this selection was the thematic relevance of a passage with regard to the research question. More specifically, we selected interviews with passages that included statements about how remote instruction was implemented in the schools and how student learning and well-being was ensured during the first school closures.

Quantitative data source

To analyze the *SIC* in the schools prior to the lockdown, we use data from a standardized online survey carried out in the same cohort of schools (29 general and 6 vocational secondary schools) between February and April 2020. All teachers and other pedagogical staff of these schools were invited to participate in the survey. Participation in the survey was voluntary and the survey was completed individually within a time frame of 9 weeks. Although the survey was timed to coincide with the beginning of the COVID-19 pandemic, the majority of respondents finished the survey before the first school closures. A total of $N = 912$ teachers and other pedagogical staff from all 35 schools participated in the survey (overall response rate: 27.1%).

To reduce the quantitative sample to teachers and other pedagogical staff from the schools of our qualitative study, we deleted all cases that did not belong to either of these 13 selected schools. The final sample thus consisted of $N = 385$ respondents. The following information refers only to this subsample, which consisted of 11 general education and one vocational school(s). All schools can be classified as belonging to a similar type of location characterized, among others, by an above-average proportion of welfare recipients, an above-average unemployment rate, low educational qualifications, and low social mobility among residents in the neighborhood (Friedrichs and Triemer, 2008, 9–15). Responses from the school leader survey showed that the 13 schools widely differed in their percentage of students exempted from co-paying their learning materials (from "1%–5%" to "91%–100%"), the number of German language learners (from "zero" to "41%–50%"), and the percentage of

students who left school without graduating in the 2018/2019 school year (from "zero" to "11%–20%"). The mean staff size was 91.1 ($SD = 44.1$, min: 30, max: 190), and 93.6% of the respondents were teachers ($N = 352$), while 6.4 percent were other educators ($N = 24$). A total of 65.4% of the respondents were female. On average, the respondents had been employed in teaching for 13.1 years ($SD = 8.9$), and worked at the particular school for 8.4 years ($SD = 6.9$). These percentages roughly correspond to those of the project's schools as a whole, where 93.1% were teachers ($N = 831$) and 6.9% were other educators ($N = 62$). In the full sample of SSDC, the respondents had been employed in teaching for 13.6 years ($SD = 9.3$), and worked at the particular school for 8.9 years on average ($SD = 7.5$). In the whole sample, 66.2% were female and 33.4 were male.

Materials and methods

Quantitative data

In order to first capture the *SIC* of the 13 schools, we asked teachers to assess their schools' improvement capacity as illustrated in Table 2. It has to be noted that in our teacher survey, we did not assess items referring to the first dimension of school structure. Items relating to the time, space, and personnel structures conducive to a professional culture of continuous reflection and exchange were only assessed in the parallelly conducted school leader survey (e.g., who was the impetus at your school to apply to participate in the project? Which groups of people were involved in creating your school's concept and to what extent? What percentage of the educational staff at your school is actively involved in the model project?) However, these data are based on the responses of only one or two individuals. For reasons of methodological consistency, we did not aggregate these data at the school level and include them in the *SIC* index. Consequently, we cannot present any empirical data on the first *SIC*-dimension.

In a first step, we carried out descriptive statistical analyses using SPSS version 27. In doing so, we constructed several multiple-item mean scales from the variables belonging to one *SIC* dimension, whereby all items that built one dimension were from the same item sets and therefore identical in metric. Only cases with a minimum number of two valid responses to items that are part of one scale were included. For each scale, we then calculated school-level aggregated means based on the individual teacher ratings, so that all respondents belonging to the same school had identical values on the different *SIC* dimensions.

In a second step, we constructed an overall index of *SIC* for each school. In forming the index, the six composites were first standardized ($M = 0$, $SD = 1$) to achieve consistency in the response scales, and then combined to a mean scale. The index thus tapped five of the six constituent dimensions outlined above and showed a very good internal consistency (Cronbach's alpha = 0.89). The results of exploratory factor analyses (EFA) showed that all scales and subscales had a one-dimensional structure, loading on one common factor. All factor loadings were above 0.60. Based on their value on the standardized *SIC* index, we categorized the 13 schools of our subsample into two different groups: (1) Schools with low *SIC* (values below zero, $N = 6$) and (2) schools with high *SIC* (values above zero, $N = 7$).

Interviews

In preparation for the analysis, the qualitative interviews were transcribed verbatim (Dresing and Pehl, 2018). To analyze the qualitative interview data, we used structuring content analysis (Kuckartz, 2018; Mayring, 2000). The statements from the interviewees served as the unit of analysis. The aim of the qualitative analysis was to reduce and structure the existing material in order to be able to systematically describe the measures taken by the principals and leadership teams. For this purpose, we developed an initial category system and revised it in a deductive-inductive approach in accordance with the research interest, the interview protocol, and the material. Our final category system consisted of two main categories, capturing (1) how distance learning was implemented in the individual schools, and (2) how schools aimed to sustain student learning and well-being under school closures. From these categories, we then formed five different sub-categories based on the interview material (see Results chapter for more details).

Triangulation

Following the systematic description of the reported responses to the pandemic and relating them to the quantitative data on *SIC* outlined above, we conducted a typifying content analysis in a second step. In doing so, we identified and grouped the schools with similar patterns depending on both the type and extent of the described responses. We used the reported type, scope, and number of measures taken by the schools in evaluating and assigning them to clusters that were in themselves as uniform as possible. The clusters were then validated and adapted in discursive exchange within the research team. The theoretical framework of capacity building together with empirical evidence related to the school improvement and effectiveness literature guided this step. It has to be highlighted that the classification of measures does not allow for a clear delimitation, but instead reveals tendencies where members of the same group are as homogeneous as possible. In presenting our results, some quotations from the interview material will serve to better illustrate the reported measures taken as well as our assignment of groups. Other aspects are summarized for reasons of space. All direct quotes are translated from German.

Results

Schools' initial level of *SIC*

The results from the teacher survey showed a considerable amount of heterogeneity in the reported level of *SIC* prior to the

TABLE 2 Operationalization of *SIC*.

Scale	Subscale	N° items	Example item	Response scale	Reliability	Source
2. Shared commitment and collaborative activity						
Collaboration among staff	Overall scale	15			α = 0.77	Fussangel (2008), Pröbstel (2008), modified
	Professional exchange	4	"I share important job-related information with my colleagues."	1 = never; 4 = very often	α = 0.76	
	Student-related exchange	3	"I confer with my colleagues when I have difficulties with individual students."	1 = never; 4 = very often	α = 0.80	
	Joint organization of work	4	"I create worksheets together with my colleagues."	1 = never; 4 = very often	α = 0.77	
	Co-construction and Reflection	4	"In order to receive feedback, I conduct classroom observations with my colleagues."	1 = never; 4 = very often	α = 0.62	
Clarity of goals and consensus		9	"I easily understand our school's goals."	1 = do not agree at all; 5 = fully agree	α = 0.95	Leithwood et al. (2006), translated
3. Skills and knowledge						
Willingness to innovate		6	"In our school, there is usually a lot of reluctance to change."	1 = does not apply at all; 5 = applies fully	α = 0.81	Quellenberg (2009)
Systematic planning of PD		6	"Our school regularly offers formal opportunities for continuing education and professional development (e.g., in the form of internal school PD)."	1 = do not agree at all; 5 = fully agree	α = 0.84	Leithwood et al. (2006), translated
4. Leadership						
Transformational leadership practices	Total leadership scale	4			α = 0.92	Klein and Bronnert-Härle (2020) translated and adapted from Leithwood et al. (2006)
	Goal-oriented leadership	7	"Leadership at our school gives us a sense of overall purpose."	1 = do not agree at all; 5 = fully agree	α = 0.95	
	Fostering collaboration	4	"Leadership at our school facilitates effective communication among staff."	1 = do not agree at all; 5 = fully agree	α = 0.92	
	Intellectual stimulation	5	"Leadership at our school encourages me to try new practices consistent with my own interests."	1 = do not agree at all; 5 = fully agree	α = 0.92	
	Providing a safe learning and working environment	4	"Leadership at this school fosters a safe learning environment for all in the school."	1 = do not agree at all; 5 = fully agree	α = 0.87	
5. Feedback and accountability						
Feedback culture	Use of feedback	2	Feedback from collegial observation	1 = not at all; 5 = to a high extent	r = 0.33	Demski and Racherbäumer (2017), modified
6. Participative decision making grounded in teacher empowerment						
Fostering shared decision-making		4	"Leadership at this school frequently takes our opinion into account when making decisions."	1 = do not agree at all; 5 = fully agree	α = 0.93	Klein and Bronnert-Härle (2020), translated and adapted from Leithwood et al. (2006)

Item examples are translated versions of the German items; α = Cronbach's alpha

school closures. Table 3 shows the means and standard deviations for the individual SIC measures as well as for the overall index. The results are provided for the entire sample as well as separately for the two groups of schools, referred to in the following as low and high SIC schools. The group means differed by 2.57 standard deviations for the overall *SIC* index (95%-CI [−4.07; −1.02]). Independent samples *t*-tests showed that the mean scores for all dimensions except "collaboration among staff" (low capacities: *M* = 2.62, *SD* = 0.19, high capacities: *M* = 2.75, *SD* = 0.11, *t*(11) = −1.55, *p* = 0.150), "systematic planning of PD" (low capacities: *M* = 3.27, *SD* = 0.35, "high capacities": *M* = 3.61, *SD* = 0.21, *t*(11) = −2.20, *p* = 0.050), and "feedback culture" (low capacities: *M* = 2.84, *SD* = 0.23, high capacities: *M* = 3.20, *SD* = 0.40, *t*(11) = −1.98, *p* = 0.074) differed systematically between the two groups.

Figure 1 illustrates the standardized values for the two *SIC* groups, both for the overall *SIC* index and the individual dimensions. The standardized mean value for the *SIC* index across schools with "low *SIC*" was −0.82, compared to 0.70 for schools with "high *SIC*." While the schools in the "high *SIC*" group showed comparably high values on the two dimensions of "clarity of goals and consensus" (0.71) and "leadership" (0.70), the first group fared comparably low with regard to these dimensions.

Further group comparisons revealed that there were no statistically significant differences between "high *SIC*" and "low *SIC*" schools in terms of their percentage of students exempted from co-paying their learning materials ["low *SIC*": *M* = 6.17, *SD* = 2.79, "high *SIC*": *M* = 7.14, *SD* = 2.91, *t*(11) = −0.61, *p* = 0.551], the number of German language learners ["low *SIC*": *M* = 4.17, *SD* = 1.94, "high *SIC*": *M* = 3.43, *SD* = 1.62, *t*(11) = 0.75, *p* = 0.470], and the percentage of students who left school without graduating in the 2018/2019 school year ["low *SIC*": *M* = 2.75, *SD* = 1.50, "high *SIC*": *M* = 1.57, *SD* = 0.54, *t*(3.4) = 1.52, *p* = 0.215].

Responses to school closures

In a second step, we took a closer look at the measures that the schools had developed to implement distance learning and ensure student learning and well-being under school closures. According to the qualitative statements of the school leaders, all schools of our sample provided some form of distance learning arrangement at the beginning of the COVID-19 outbreak. Since preparation time was short and the state government and municipalities largely left it to schools and individual teachers to organize distance learning (Andrew et al., 2020), there was considerable heterogeneity in how schools developed solutions for distance learning. Nevertheless, the measures taken at the 13 schools can be grouped into different thematic fields (see Table 4). Each of these fields can be related to one or more dimensions of *SIC*, however with some overlaps because the dimensions of *SIC* were often interdependent. Concerning *organizational structure*, some schools built new structures and routines that facilitated institutionalized collaboration and enabled teachers to participate in decision-making processes, including, for example, the formation of new

project groups or teams related to distance learning and digitalization. The principal of one school emphasized the priority to set up school-wide exchange of information and uniform regulations concerning the structuring of distance learning:

> "And we deliberately said, we don't want to just let distance learning run from the beginning and each teacher does what they […] want, but we called the subject conferences together and said, "Okay, dear teams, so dear subject teacher teams, agree on what should be accomplished this semester and also what can't be accomplished this semester. […] So, we have tried very hard to structure and standardize it here so that we can somehow deal with the situation and our students don't drift off somewhere, but rather we all pull together as much as possible." (school D, translated)

The second dimension of *shared commitment and collaborative activity* manifested itself empirically in school-wide consensus concerning offerings designed to ensure student learning and well-being, such as joint efforts to sustain as much of the regular classroom instruction as possible, informally exchanging ideas within grade levels and then sending out materials to students where it was not possible digitally, or setting up individual counseling and support structures by class teachers and social workers for disadvantaged students:

> "And we also interviewed or visited some of the students that we didn't reach at all via home visits as a team with the classroom teachers or the school social workers. We are relatively proud of the fact that during the lockdown we only lost two students completely, only two, with whom we had no contact at all during that time." (school B, translated).

As for the third dimension of *shared skills and knowledge*, several schools reported to have systematically trained the staff in the use of digital tools shortly before or after the school closures, while others largely left it up to the teachers to generate knowledge and explore new forms of instruction. One school implemented both externally organized PD days and low-threshold PD measures within the school while making active use of the staff's existing skills and experiences:

> "We had for March 16, first day of school closure, a PD day, pedagogical day, dedicated to digital learning. […] We had a team of colleagues, primarily computer scientists, […] who then offered webinars […]. And in this context, we, for example, also made use of the knowledge of our trainees, that is, colleagues who are still in training or are about to take their exams." (school I, translated).

Concerning the dimension of *feedback and accountability*, two schools reported to have recorded the students' digital possibilities and needs *via* surveys to get an overview of the new situation. Several schools expressed that there had been a high level of

TABLE 3 Group comparison between schools with low and high *SIC*.

	All schools (*n* = 13)				Low *SIC* (*n* = 6)				High *SIC* (*n* = 7)				
	M	*SD*	Min	Max	*M*	*SD*	Min	Max	*M*	*SD*	Min	Max	*ES* [95%-CI]
2. Shared commitment and collaborative activity: Collaboration among staff	2.69	0.16	2.38	2.92	2.62	0.19	2.38	2.92	2.75	0.11	2.62	2.91	−0.86 [−1.99; 0.30]
2. Shared commitment and collaborative activity: Clarity of goals and consensus	3.87	0.34	3.27	4.37	3.59	0.24	3.27	3.87	4.11	0.18	3.77	4.37	−2.48 [−3.94; −0.95]
3. Skills and knowledge: Systematic planning of PD	3.46	0.32	2.62	3.94	3.27	0.35	2.62	3.59	3.61	0.21	3.35	3.94	−1.23 [−2.40; 0.00]
3. Skills and knowledge: Willingness to innovate	3.42	0.25	2.79	3.75	3.27	0.26	2.79	3.54	3.54	0.17	3.31	3.75	−1.27 [−2.46; −0.04]
4. Leadership	3.47	0.47	2.69	4.05	3.08	0.38	2.69	3.72	3.80	0.22	3.47	4.05	−2.35 [−3.78; −0.86]
5. Feedback and accountability: Feedback culture	3.04	0.37	2.50	3.79	2.84	0.23	2.50	3.10	3.20	0.40	2.70	3.79	−1.10 [−2.26; 0.10]
6. Participative decision making grounded in teacher empowerment: Fostering shared decision making	3.40	0.45	2.48	3.95	3.12	0.49	2.48	3.95	3.63	0.27	3.14	3.87	−1.30 [−2.50; −0.06]
SIC index	3.33	0.26	2.78	3.73	3.11	0.18	2.78	3.24	3.52	0.14	3.34	3.73	−2.57 [−4.07; −1.02]

ES, Effect size by Cohen (Cohen's d); 95%-CI, 95%-confidence interval.

motivation and willingness among the staff to support the changes resulting from the school closures. The extent to which schools used feedback from diverse information sources to constantly check whether the taken measures were effective cannot be assessed in detail. However, one school reported that they collected a pool of digital tools, apps, and recommendations based on each teacher's experiences, and then made a ranking "as to which apps can really be used well in the classroom" (school I, translated). This procedure also reflects the dimensions of *organizational structure* and *participative decision making grounded in teacher empowerment*, by creating interdependencies between teachers and granting them the freedom and responsibility to participate in decisions concerning teaching

during the pandemic, such as in the form of newly formed teams. The dimension of *leadership* can be classified as a cross-dimensional aspect, which included in particular promoting collaboration, targeted use of data, and PD of teachers, as well as providing opportunities for teachers to participate and get involved in school-wide decision-making processes.

In order to achieve a further structuring of our qualitative interview data based on the thematic fields outlined above, we categorized the principals' statements at the individual school level. This means that we looked at the principals' qualitative statements about the measures taken during the school closures separately for each of the 13 schools. We then related these statements to the identified thematic fields. Grouping the
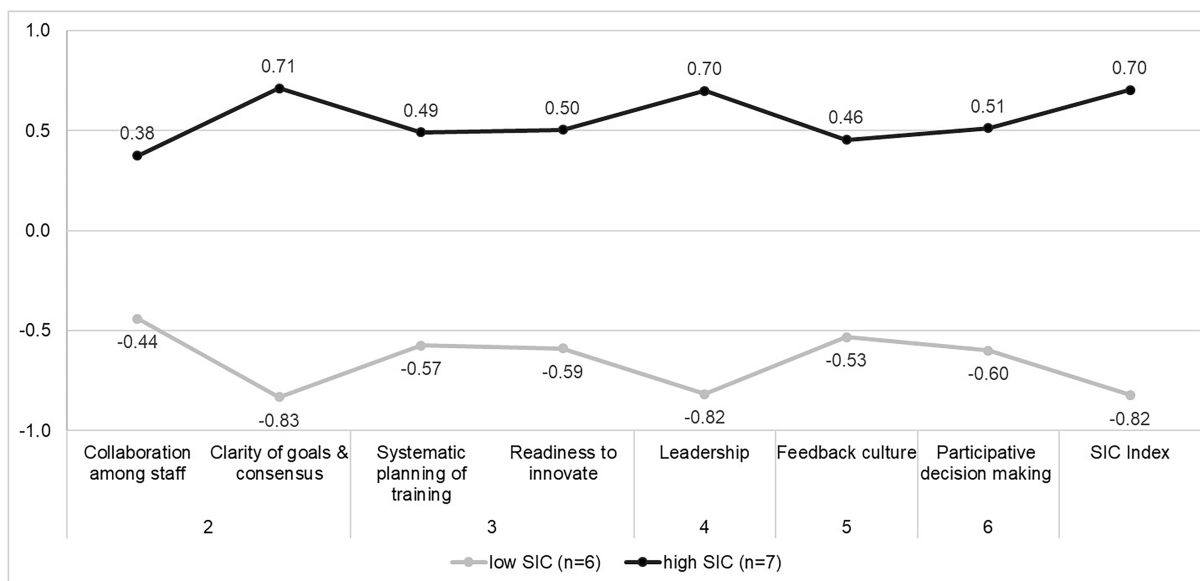
Schools' initial level of *SIC*, overall (index) and by the separate dimensions of *SIC*. Standardized values (*M*=0, *SD*=1) based on aggregated school data.

individual schools according to the type and extent of the measures taken resulted in three distinct groups of schools: (1) *extensive action*, (2) *visible effort*, and (3) *rudimentary effort* (see Table 5).

Responses to school closures based on *SIC*

Finally, we matched the level of *SIC* (high and low *SIC* schools) to the three groups that we had deduced from the qualitative interviews. All schools that were categorized under "extensive action" also showed above-average values on *SIC*, while all schools that reported "rudimentary effort" had below-average *SIC*. Half of the schools that reported some visible effort to sustain student learning and well-being were categorized as high *SIC* schools, while the other half were low *SIC* schools. As a result, we distinguished four groups: (A) *Extensive action with high SIC*, (B) *Visible effort with high SIC*, (C) *Visible effort with low SIC*, and (D) *Rudimentary effort with low SIC*. Table 6 displays the means and standard deviations for all of the *SIC* measures and for the overall *SIC*-index separately for the four groups of schools.

Figure 2 shows the four standardized group means for the six dimensions of *SIC* as well as for the overall index. In the following, the four empirical patterns will be described in more detail.

Group A: Extensive action with high *SIC*

In this first group, schools reported extensive action to provide instruction and sustain student learning and well-being under school closures. In some instances, the schools even reported to

have bent the rules in order to reach their students. All schools in this group were general education schools and—according to the statements of the interviewed principals—well equipped in terms of digital infrastructure.

As can be seen from the mean standardized values in Figure 2, the three schools generally scored above average in all dimensions of *SIC*, with comparably high ratings for *clarity of goals*, *consensus among staff*, and *transformational leadership*. The qualitative statements of the principals indicated that the measures taken at these schools involved efforts to provide adequate conditions for distance learning for all students, especially those from less affluent families, and—in two cases—prioritizing safe schooling on-site to promote social bonding with the class teachers. Two of the schools used a student survey at the beginning of the school closures to collect data on the students' digital resources and needs. In addition, one school put a special focus on teacher PD in digital skills, and distributing decommissioned digital devices to those students "where there was nothing at all" (school L, translated).

Group B: Visible effort with high *SIC*

As Figure 2 shows, the schools in the second group had above-average values on all dimensions of *SIC*. One school stood out with considerably high values across all scales. The qualitative statements of the principals revealed that this school—like one other of this group—had a rather low digital infrastructure at the time of the interview, while the other half had a quite high equipment with digital technologies.

The schools of this group all showed visible effort to sustain student learning, with clear differences in the effort levels between the schools. As a common element, none of

TABLE 4 Overview of the thematic fields from the qualitative interviews with school leaders.

Ensuring communication among staff and with students	Getting an overview by assessing students' needs	Keeping in view student learning and well-being	Building and strengthening digital competencies	Sharing tasks and responsibilities
• Setting up digital learning platforms • Contact through different channels (video conference, email, WhatsApp, sending out worksheets and home learning packs)	• Collecting data on digital resources and student needs (e.g., student surveys)	• Distribution of old school digital devices to students • In-school self-learning center/learning office with Wi-Fi coverage • Individual counseling and support by class teachers and social workers (home visits) • Contact beyond pure instruction for teachers and students • Unofficial expansion of emergency care • On-site teaching for disadvantaged students (against regulations) • Effort to follow regular classroom instruction as extensively as possible and to stick to the regular instructional plan	• Organization of a PD day dedicated to digital tools • Low-threshold support among staff (e.g., PD via webinars) • Flexibly arranged micro PD among staff • Intensive individual engagement with digital formats • Giving teachers and students time and space to get familiar with and implement virtual classrooms	• Formation of new teams, e.g., media team, digitalization team, distance learning team • Clear structuring of procedures related to distance learning and learning content

these schools had designed special strategies to promote student learning and well-being during the first time of school closures, especially with regard to disadvantaged students. However, all schools tried to ensure communication between staff and students through different channels (e.g., home learning packs, sending out worksheets, photos *via* WhatsApp, online video conferencing), while they actively worked on building and strengthening the digital competencies of teachers and students during this first time of school closures. Facing a low level of digital equipment, one school newly established a digital platform following the school closures, after publishing all the tasks by class and year on the homepage in the first period and then switching to having the students come to school every day, two grades at the same time. Another school with a relatively low level of digital equipment reported that they "made new contingency plans every 3 days or so that our students would be taught German, Math, and English." The school tried to follow regular classroom instruction as extensively as possible:

> "So we really tried until the summer vacations to get as many students as possible into the school on as many days with as many hours as possible. Because that was the only way to keep in touch with the children. That went well in, in, in large parts. There are, of course, about a handful of students in each class who have gone off for three months or so. I think we've made

the best of it. We were always within the guidelines of the ministry, what they wanted we had already enforced before mostly. We were also often far enough beyond that." (school C, translated)

Another school of this group focused on ensuring communication with students *via* their internal school network that "a massive number of students were not yet able to use" (school M, translated):

> "So that in addition to […] implementing hygiene measures and so on and so forth, we set this focus and we made it our goal to get a hundred percent of our students online before the vacations. We didn't quite manage that, but compared to the thirty or forty percent we had before, we're now much better." (school M, translated)

Group C: Visible effort with low *SIC*

According to the qualitative statements of the principals, the four schools of the third group had varying levels of digital infrastructure at the time of the interview, ranging from rather low to comparably high. None of these schools reported any explicit measures or strategies designed to promote student learning and well-being under school closures. Instead, one school with little digital equipment stressed the need of first

TABLE 5 Response patterns to school closures.

(1) Extensive action (*n* = 3)	(2) Visible effort (*n* = 8)	(3) Rudimentary effort (*n* = 2)
a) Ensuring communication among staff and with students (launch of digital platform, contact through different channels) *School B*: "So we **launched the platform relatively quickly**, still in March during the lockdown […] which had the advantage that it was free, that it did not cost anything for our students either and was relatively easily accessible for our colleagues. […] And of course, we also had a **contact offer beyond the pure teaching offer**. Not only **for our students**, but also **for our colleagues**." (translated from German)	a) Ensuring communication among staff and with students (launch of digital platform, contact through different channels) *School A*: "These were the parallel class levels that **exchanged information**. They also **met in part**, **sent materials** where it was not possible digitally. So really manual work and then copied worksheets and packed them into envelopes. And we also **set up team structures** that we supported with Zoom conferences for individuals who belonged to a risk group and could not yet come to school." (translated from German)	a) Ensuring communication among staff and with students (use of digital platform) *School K*: "The danger I saw then was, okay, they [the colleagues] know now, **you can do this** [use of digital equipment] **from home**. But why should I do that? And then came the school closures. And then they were **forced to use that**." (translated from German)
b) Getting an overview by assessing students' needs (student survey) *School I*: "We **evaluated which students even have Wi-Fi** at home? Who has an Internet-enabled laptop or tablet?" (translated from German)	b) Getting an overview by assessing students' needs (student survey) *School J*: "For example, in the Corona period we **surveyed which students, or how many students, have which devices at home to work with**. […] A lot of the tasks we have given out are either nonsense or can only be solved with great difficulty for the students." (translated from German)	b) Getting an overview by assessing students' needs
c) Keeping in view student learning and well-being — Effort to follow regular classroom instruction as extensively as possible — Opening of a learning office/self-study center with Wi-Fi coverage — Reactivation and provision of old digital devices from school — Individual counseling and support by class teachers and social workers (home visits) — On-site teaching offer for disadvantaged students *School B*: "At that time, we also **opened a learning office or self-study center** for our upper school, as a meeting place and as a learning office for our students, who had no other place, because we had Wi-Fi coverage there. […] And we **tried to bring as many students as possible to school** in small groups on as many days as possible. […] And we also **interviewed or visited some of the students** that we did not reach at all *via* **home visits** as a team with the classroom teachers or the school social workers. We are relatively proud of the fact that during the lockdown we only lost two students completely, only two, with whom we had no contact at all during that time." (translated from German)"	c) Keeping in view student learning and well-being — Effort to follow regular classroom instruction as extensively as possible — Reorganization of graduations *School C*: "The biggest problem was really, distance learning, because our students do not have appropriate digital devices. […] So, we really tried until the summer vacations to **get as many students as possible into the school on as many days with as many hours as possible**. Because that was the only way to keep in touch with the children." (translated from German)	c) Keeping in view student learning and well-being *School H*: "It has to be said that **we certainly did not reach many students to the extent that we would have liked,** simply because the digital prerequisite is, in some cases, completely zero. And that was of course a very, very difficult process, that is true. A lot of the **commitment and motivation that was there first went down again**. And that now has to be painstakingly rebuilt, so to speak." (translated from German)

(Continued)

TABLE 5 (Continued)

(1) Extensive action (*n* = 3)	(2) Visible effort (*n* = 8)	(3) Rudimentary effort (*n* = 2)
d) Building and strengthening digital competencies (Giving teachers and students the opportunity to familiarize with digital tools, low-threshold support among staff, prior PD) *School I*: "We had a **team of colleagues**, primarily computer scientists, but not only, who then **offered webinars**, who sometimes spent an hour or more with the colleague at the other end thinking, how do you now set up the digital classroom on your laptop? And that was, for example, I would say, a great leap forward in instructional development, which was necessary, but nevertheless very successful. […] And in this context, we, for example, also **made use of the knowledge of our trainees**, that is, colleagues who are still in training or are about to take their exams […] And each colleague now looks for themselves and their subject, what is useful for this? We **collect this in a pool** and from this a ranking is to be created with recommendations as to which apps can really be used well in the classroom?" (translated from German)	d) Building and strengthening digital competencies (Giving teachers and students the opportunity to familiarize with digital tools, prior PD) *School E*: "At the end of March, we tried to see if we could give **all the teachers, including the students**, who had not worked with the system [digital learning platform] before, the **opportunity to set up virtual classrooms**. And that worked. Of course, the teachers did not reach all of our students on a regular basis, but at least they were able to set up access. So that **distance learning**, at least when the students had someone at home to take care of it, **theoretically worked** for us. And that's how we did it." (translated from German)	d) Building and strengthening digital competencies (prior PD, individual engagement with digital tools) *School H*: "I would say that **almost 80 to 90 percent of my colleagues have now really taken a close look at the possibilities in the area of digitization**. And I do not think we need to demand any more readiness for this. My colleagues have definitely noticed the opportunities and potential that exist in this area." (translated from German)
e) Sharing tasks and responsibilities (formation of a large media team following school closures) *School I*: "We **formed a media team** made up of many colleagues who are interested, which is also relatively large. There are certainly 15 colleagues who have agreed to train other colleagues. On the one hand, via webinars, and on the other hand, here on site, where certain techniques were explained again in small groups once it was allowed again. (translated from German)	e) Sharing tasks and responsibilities (formation of digitalization group and distance learning group, clear structuring of procedures) *School D*: "And we deliberately said, we do not want to just let distance learning run from the beginning and each teacher does what they […] want, but **we called the subject conferences together** and said, "Okay, dear teams, so dear subject teacher teams, agree on what should be accomplished this semester and also what cannot be accomplished this semester. […] So, we have tried very hard to **structure and standardize** it here so that we can somehow deal with the situation and our students do not drift off somewhere, but rather we all pull together as much as possible." (translated from German)	e) Sharing tasks and responsibilities

Own emphasis in bold text. Examples from each subgroup are presented for each thematic field.

familiarizing with the schools' digital platform and corresponding tools during school closures as well as creating organizational conditions for distance learning: "[…] we were first busy looking at exactly how […] we can create our digital learning in the first place" (school D, translated). At the same time, the principal of this school reported that they had arranged teams that would focus on digitalization and distance learning, while clearly structuring distance learning from the beginning by asking teacher teams to define goals for new learning material during the school term. Similarly, another school of this group with likewise low digital equipment was predominantly occupied with first implementing distance learning and the digital prerequisites: "And the focus was really on how we can maintain contact with the students in the first place. Because, as I said, the digital learning platform was not available. So, we introduced distance learning from a distance, so to speak" (school F, translated). Another school with a quite high initial level of digital equipment had "tried to see if see if [they] could give all teachers, even those who have not worked with it [digital learning platform] before, including the students, the opportunity to set up virtual classrooms" right after the start of the school closures (school E, translated). At the same time, they "were lucky" to have already installed a digital learning platform at the beginning of the school year. The principal concluded: "And that worked. Of course, the teachers did not reach all the students on a

TABLE 6 Means and standard deviations for the six *SIC* dimensions by the four groups of schools.

	Group A: Extensive action with high *SIC* (*n* = 3)				Group B: Visible effort with high *SIC* (*n* = 4)				Group C: Visible effort with low *SIC* (*n* = 4)				Group D: Rudimentary effort with low *SIC* (*n* = 2)			
	M	*SD*	Min	Max	*M*	*SD*	Min	Max	*M*	*SD*	Min	Max	*M*	*SD*	Min	Max
2. Shared commitment and collaborative activity: Collaboration among staff	2.76	0.15	2.62	2.91	2.75	0.11	2.64	2.88	2.63	0.24	2.38	2.92	2.61	0.02	2.59	2.62
2. Shared commitment and collaborative activity: Clarity of goals and consensus	4.22	0.14	4.09	4.37	4.03	0.18	3.77	4.17	3.46	0.17	3.27	3.66	3.84	0.04	3.82	3.87
3. Skills and knowledge: Systematic planning of training	3.62	0.30	3.35	3.94	3.61	0.16	3.51	3.86	3.21	0.40	2.62	3.50	3.38	0.29	3.18	3.59
3. Skills and knowledge: Willingness to innovate	3.62	0.12	3.54	3.75	3.49	0.19	3.31	3.66	3.20	0.31	2.79	3.54	3.40	0.10	3.33	3.46
4. Leadership	3.94	0.01	3.92	3.95	3.70	0.26	3.47	4.05	3.14	0.42	2.72	3.72	2.96	0.39	2.69	3.24
5. Feedback and accountability: Feedback culture	3.23	0.34	3.03	3.63	3.18	0.49	2.70	3.79	2.86	0.18	2.68	3.10	2.79	0.41	2.5	3.08
6. Participative decision making grounded in teacher empowerment: Fostering shared decision-making	3.58	0.39	3.14	3.87	3.66	0.20	3.37	3.78	3.21	0.60	2.48	3.95	2.95	0.19	2.82	3.08
SIC index	3.57	0.05	3.51	3.62	3.49	0.18	3.34	3.73	3.10	0.22	2.78	3.24	3.13	0.13	3.04	3.23

regular basis, but at least they were able to set up access. So, distance learning, at least when the students had someone at home to take care of it, theoretically worked for us." (school E, translated). Finally, the fourth school of this group reported having used their already installed digital learning platform, recognizing at the same time that "there is a problem of equipment with digital end devices" (school G, translated). Having trained all colleagues before the school closures and informed the students about how to use the digital learning platform in advance, the school additionally trained the secretary to be able to assist students during school closures. Furthermore, the school planned "a whole pool of distance tasks in advance."

Group D: Rudimentary effort with low *SIC*

The two schools of the last group scored below-average on most dimensions of *SIC*, both with a negative standardized *SIC* index value, and were characterized by relatively low ratings of *transformational leadership practices*, *participative decision-making*, and *feedback culture*. In the qualitative interviews, the principal of one school reported: "almost 80%–90% of my colleagues have now really taken a close look at the possibilities in the area of digitization" (school H, translated), stressing that COVID-19 has brought a "great advantage" in advancing the topic of digitization. As far as the school's reactions under school closures are concerned, the principal merely states that "distance learning […] is of course very difficult," adding that
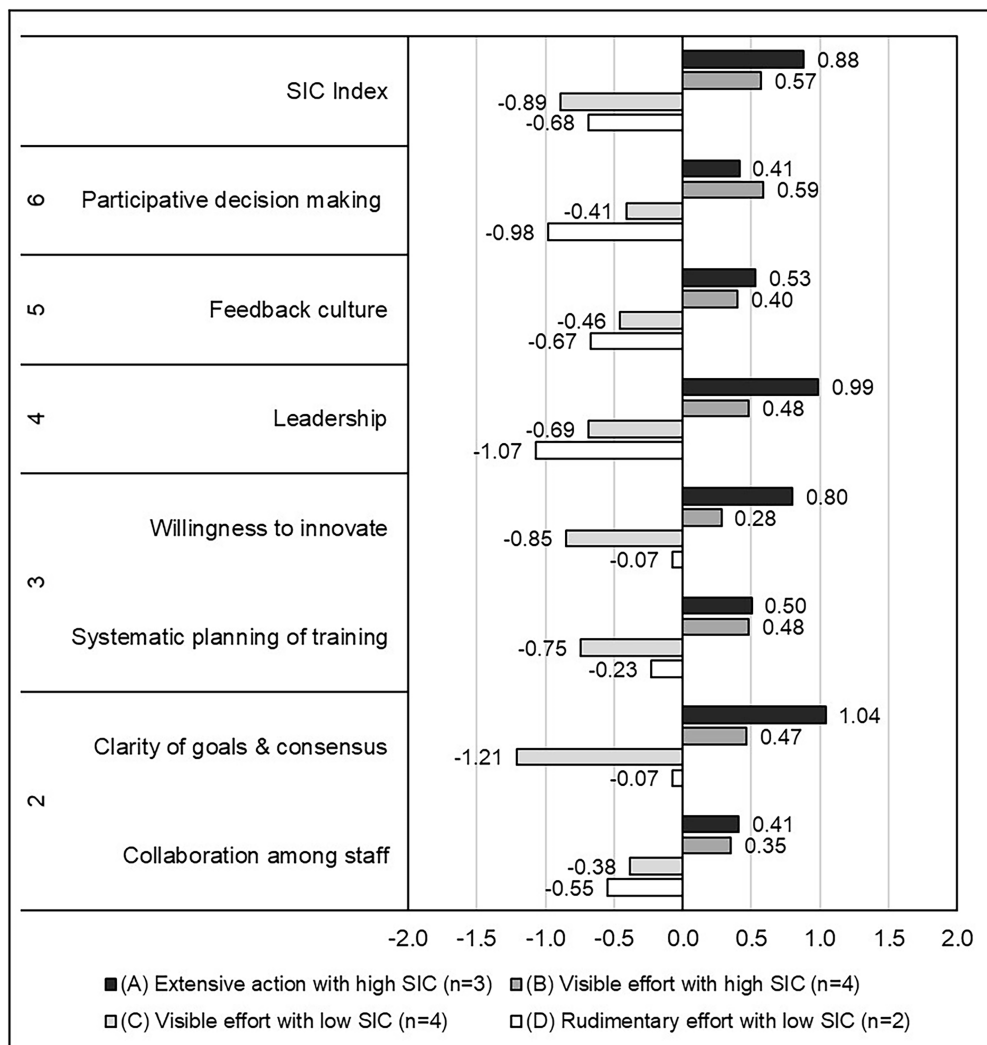
FIGURE 2
Group means of *SIC*. All variables were standardized (*M*=0, *SD*=1).

on-site schooling was necessary to re-establish the social bonding with students:

> "And yes, now we are returning to on-site teaching with the appropriate protective measures, which is certainly necessary in order to re-establish a bond with the students. It has to be said that we certainly didn't reach many students to the extent that we would have liked, simply because the digital prerequisite is, in some cases, completely zero. And that was of course a very, very difficult process, that's true. A lot of the commitment and motivation that was there first went down again. And that now has to be painstakingly rebuilt, so to speak." (school H, translated)

The principal of the other school reported that the teachers had previously been trained in digital skills, "and the fact that the PD was still fresh, I think, was now a huge opportunity, a super

opportunity to apply the knowledge we had just learned" (school K, translated). When the school closures were enforced, the staff "was forced to use" their newly gained knowledge. The interview material does not contain any information about complementary activities or strategies that ensured the support of socio-economically disadvantaged students.

Discussion

Drawing on the school improvement capacity approach (Marks and Louis, 1999; Feldhoff, 2011), the goal of the paper was to shed light on the relationship between schools' efforts to sustain teaching and learning during the first school closures in the context of COVID-19, and the prior level of *SIC* in schools serving disadvantaged communities in one German state. To do so, we first assessed each school's level of *SIC* as perceived by teachers

and other pedagogical staff in the schools. Second, we outlined several thematic fields in the schools' responses to the first school closures, based on data from qualitative interviews with school leaders. Third, we related these thematic fields to the reported level of *SIC* in the individual schools.

Before we discuss the results, some limitations of our research must be addressed. First, our data is based on a small sample of schools that had already been pre-selected for a model project by the States' Ministry for School and Education. As a result, the schools may exhibit certain features (e.g., more contact with educational administration and research) and receive special resources for school improvement. Second, due to the low response rate to the standardized online surveys, the sample and school-level constructs might not validly represent the schools' total personnel. With an average of around 30 responses per school, one should be cautious in assuming that the *SIC* categorizations are robust. Third, our sample consisted only of schools whose principals agreed to participate in the interviews, and who then described their responses to the pandemic, which may lead to further selection bias. In that light, our study must be understood as strictly exploratory without any claim of being representative. Fourth, some of our indicators to operationalize the six *SIC*-dimensions showed rather low internal consistency and were not based on empirically validated scales.

Fifth, our identification of response patterns is based, among other things, on qualitative interview data. In addition to social desirability bias, it is possible that school leaders did not disclose all of the actions they took during the first school closures. This could be because the questions about schools' responses to the pandemic were only some of many other questions in the interviews. Nonetheless, all schools were informed in advance of the interview topics and were given ample time in the interview to talk about their experiences at the beginning of the pandemic. With these limitations in mind, the identified groups must be understood as an exploratory approach to finding common patterns that needs further validation in more in-depth analyses. Ideally, data on (the development of) *SIC* should be collected on a longitudinal basis. Generally, our data needs to be validated with larger samples and schools from different locations to make reliable statements about the relationship between prior *SIC* and responses to crises such as COVID-19.

Keeping these limitations in mind, our results suggest that although we observed a considerable amount of heterogeneity in the reported level of *SIC* across the schools prior to the school closures, we were able to distinguish two groups of schools with relatively low *SIC* and relatively high *SIC* based on their standardized scores on the six dimensions of *SIC*. While all schools in our sample were faced with the challenge of responding to the pandemic and quickly designing, implementing, and sustaining distance learning, we could observe clear differences in the schools' reported efforts. One group of schools was characterized by a highly active and, at some points, pragmatic handling of the crisis, a second group reported considerable efforts to adapt to the new situation, but did not put a special focus on the learning and well-being of students in

particularly precarious situations. Finally, a third group of schools was characterized by rather rudimentary action in response to the school closures, neither focusing on shared tasks and responsibilities, nor on their students' needs. Combining the data from the survey of teachers and further pedagogical staff, and the qualitative interviews with principals, we delineated four distinct groups that were comparable to the three groups outlined above, but further distinguished between low and high *SIC* schools in the second group. This variation in both school improvement capacity as well as in schools' responses to the pandemic has also been documented in prior research and led to the building of a typology of schools. For example, Duff (2021) identified six *SIC* subgroups and found that teachers' and school leaders' perceptions of challenges related to COVID-19 as well as schools' strategies to adapt to these challenges varied, in part, as a function of their *SIC* at the onset of the pandemic.

Interestingly, all schools that reported extensive action and measures as a response to the first school closures (group A) also had an above-average *SIC*, while all schools characterized by rudimentary actions (group D) scored below-average on the *SIC* index, and in five of the six individual dimensions. In the second group, schools with both low and high *SIC* prior to school closures were observable. This indicates that *SIC* might be influential in how schools generally adapt to crisis events, although this association is not deterministic. In particular, some schools with an above-average *SIC* did not report extensive measures to sustain student learning and well-being, while some schools with below-average *SIC* showed visible efforts to deal with the school closures. Looking at the individual dimensions of *SIC*, we found that the more "active" schools of our sample were generally characterized by a higher clarity of goals and consensus regarding the schools' mission, higher ratings of transformational leadership practices, and an above-average willingness to innovate.

While all schools provided some form of distance learning during the first school closures, not all started from the same position. In fact, the extent to which schools sought ways to meet their students' needs and to continue instruction under school closures appeared to also depend on the digital infrastructure available to the schools: Schools that had already developed technical and digital capacities prior to the school closures appeared to deploy distance learning more easily by using existing resources. This result is in line with other research from Germany, which shows that technically more advanced schools were able to facilitate motivating, effective distance learning, and support the learning processes of their students over a longer period of time, as compared to schools with fewer digital resources (Eickelmann and Drossel, 2020; see also Eickelmann and Maaz, 2021). In contrast, some of the schools in our sample had a lower digital infrastructure, and therefore were predominantly occupied with first implementing the digital prerequisites for distance learning.

However, although all three schools in the extensive action pattern were characterized by a comparably high level of digital infrastructure at the time of the interview and probably already at

the beginning of the school closures, our results suggest that the digital infrastructure alone did not determine how the schools responded to the pandemic. For instance, two schools with relatively low digital infrastructure showed a comparably high effort to deal with the new situation. At the same time, the two schools with rudimentary effort, as well as several that were categorized into group 2, reported a rather high level of digital infrastructure. To sum up, good digital prerequisites in the schools helped them design appropriate measures and strategies to continue teaching and learning remotely, but digital equipment was not the single factor that determined low and high efforts under school closures. Whether schools with a better digital infrastructure before school closures were generally better able to adjust to the new situation cannot, however, be fully addressed in this paper.

Our results further demonstrate that one of the most active schools of our sample had established a concept of professionalization that involved short (both in-school and digital) micro PD in which the teachers organized and made use of knowledge and expertise within the school. This PD, however, which went beyond the mere exchange of ideas and materials, involves strong leadership and may further be used predominantly by those teachers who have a certain affinity to digital techniques (Eickelmann and Maaz, 2021). The importance of teacher professional culture in establishing a capacity for organizational learning (Seashore Louis and Lee, 2016) as well as the formation of teacher teams for the purpose of innovating organizational practices (Palumbo and Manna, 2019) has been stressed in prior studies. Assessing the potential of such micro PD to train as many teachers as possible should be a matter of further research.

Besides providing opportunities for academic learning, it was vital for schools to monitor student needs and emotional health during the school closures, especially at SSDCs (Bremm, 2021). Our results suggest that while all schools focused on academic learning, only those in the most active group also reported to have reinforced their efforts to reach out to their students, for instance by making home visits, providing a self-learning center with access to WiFi, expanding emergency care and in-school instruction to students who needed it but officially were not eligible, while trying to hold on to the regular curriculum as best as possible. These schools were characterized by high *SIC* in general, but especially regarding transformational leadership practices and shared goals; this suggests that these capacities are especially important for building structures and routines enabling educators to collaboratively and continuously learn under challenging circumstances. This is in line with school improvement research stressing the importance of both shared goals among staff (e.g., Muijs et al., 2004; Hemmings, 2012) and leadership enabling collective routines for improvement (e.g., Hemmings, 2012; Herman, 2012) at SSDCs. In a recent study, Meyer et al. (2022) developed four assumptions of how principals can support teacher collaboration and, hence, processes of organizational change: through creating a clear,

long-term vision for the school and developing a strategy for implementing innovations, through involving other school staff in this decision-making process, through fostering structural prerequisites for collaboration, and through fostering the overall motivation of school staff to participate in implementing these innovations. Furthermore, Rikkerink et al., 2016 stressed distributed leadership and collective sense-making as important prerequisites for the incorporation of digital learning materials in teaching practice. Finally, Day et al. (2016) showed that for schools to not only develop, but also sustain effectiveness, principals must understand their school's situational needs and foster clear, context-sensitive values that are shared within the school and progressively embedded in the school's work and culture.

While our results illustrate the range of initial strategies taken by SSDCs to cope with the challenges of the COVID-19 pandemic, and suggest a general, though not a deterministic association between these strategies and the *SIC* of the schools prior to the pandemic, the scope of our study does not provide any insight into whether the strategies chosen by the more active schools could prevent the achievement gap between schools in different social situations from opening further in the context of distance learning. In addition to the six dimensions of *SIC* discussed here, teachers' beliefs and attitudes (e.g., deficit thinking) may also play a role at SSDCs (Bremm and Racherbäumer, 2020; Bremm, 2021). For instance, qualitative data show that a high sensitivity for the heterogeneity and diversity of the student body, the cultivation of an appreciative school culture and a distancing from common attributions of deficit thinking are related to successful school improvement (Racherbäumer, 2017; Klein and Bremm, 2019). Future studies should systematically examine the processes in schools that may lead to the reproduction of social inequality and systematically analyze teachers' orientations and practices as well as their effects. Furthermore, a more detailed analysis of the interconnections between leadership practices, school capacities and responses to the first school closures under COVID-19 appears warranted but is beyond the scope of this study. Further research should especially look at how school organizational practices like teacher engagement or school leaders' responsiveness to student and teacher needs evolved from the beginning to the end of the pandemic. This would allow to systematically trace the development and impact of initial capacities from a longitudinal perspective. It also appears useful for future studies to incorporate a larger amount of schools in order to allow for a more fine-grained typology and subgroup classification of *SIC* (e.g., Duff, 2021).

Finally, in light of these findings, it needs to be discussed whether and how traditional school improvement and school effectiveness research needs to adapt to reflect the adaptive challenges represented by the pandemic. Prior research has indicated, for example, that COVID-19 has created an unprecedented crisis with numerous and ongoing challenges to

educational systems around the world (Rincones et al., 2021). These challenges required both adaptive and contingent leadership, including targeted responses to the social, emotional, mental health and academic needs of students and school staff (e.g., Moss et al., 2020; Cordeiro et al., 2021; Greany et al., 2022). In this sense, schools can be understood as developing "organizational conditions that enable them to continuously learn and adapt to meet the needs of their students" (Duff, 2021: 224), rather than simply achieving effectiveness. Focusing on school improvement capacity—particularly in the context of the pandemic—can help policy makers and researchers take a contextually sensitive approach to identifying and addressing school improvement needs at SSDC.

Conclusion

Our findings lend support for the idea that a school's *SIC* is indicative of their reactions to events of crisis suddenly affecting teaching and learning situations. Building a capacity for improvement, including effective leadership practices and a high clarity of goals and consensus, appears to be relevant not only to further develop existing strategies, methods, and approaches, but also to quickly adapt to new challenges. For SSDC in particular, a high level of *SIC* is likely to buffer the impact of sudden changes induced by crises that are added to the already existing external (and often internal) challenges. Our results also showed that schools with higher levels of *SIC* shortly before the beginning of distance learning in the context of the pandemic tended to focus on both continuing teaching and learning as well as securing the well-being of students. Thus, the ability to manage change—e.g. by keeping in view student learning and well-being without falling behind the standards—appears to be a distinctive feature of schools that had been able to build up a relatively high capacity for improvement.

Data availability statement

The datasets presented in this article are not readily available because in the privacy statement for the surveys, we assured participants that all data collected would not be accessible to third parties and that only those involved in the research project would have access to it. Requests to access the datasets should be directed to laura.beckmann@uni-due.de.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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