Professional Development Supporting Principals' Changing Roles as Equity-Oriented Leaders

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In these challenging times, it is essential that principals serve as equity-oriented, antiracist, culturally competent leaders accountable for students' performance, school improvement, and policy requirements. Many studies focus on professional development (PD) for teachers but not school leaders, thus the value of the present analysis is that principal PD is the centerpiece. This literature review/conceptual article examines quality PD that advances principals' learning and effectiveness in the context of their changing roles associated with instructional leadership, equity, and technology. The research question was, What does the literature convey about the main influences on effective principal PD that establish the need for equity and antiracism? Sixty-eight scholarly sources were examined in addition to public documents. The authors developed a conceptual framework named Influences on Principal Development to present various factors influencing student achievement. Six findings emerged: principal PD considerations and importance; changes in principal role and reasons for PD; types and practices of PD benefitting principals; barriers to engaging in principal PD; virtual PD platforms and their value; and leveraging virtual PD to support impact. The contribution is to knowledge of the principalship regarding quality PD and the importance of developing equity-minded leaders who impact teacher effectiveness and student performance.

Keywords: equity, instructional leadership, literature review, principal professional development

The influence of school leaders on teaching and learning has long been of interest. Principals' role in enhancing student outcomes is next only to teachers' (Cox & Mullen, 2023; Williams & Welsh, 2017). In these challenging times, it is essential that principals serve as equity-minded, antiracist, culturally competent leaders accountable for students' academic performance, school improvement, and policy requirements (Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021). A challenge is that high principal attrition has weakened school districts' ability to hire diverse principals to serve as positive role models (Tran et al., 2023).

This article examines quality professional development (PD) that advances principals' learning and effectiveness in the context of their changing roles. The role of the school principal currently reflects a broad set of responsibilities associated with instructional leadership, equity, and technology. The prominence of instructional leadership is one such change in the principalship (Darling-Hammond et al., 2022; Grissom et al., 2021; Haller et al., 2016; Kraft et al., 2016; Mizell, 2010). Instructional leadership is codified as "curriculum, instruction, and assessment" in the Professional Standards for Educational Leaders (PSEL) (National Policy Board for Educational Administration [NPBEA], 2015). Impactful instructional leadership practices are directed at higher academic standards and student outcomes, including the "racial achievement gap" and principal efforts to address racial/ethnic disparities (Diem & Welton, 2021). Data-driven instructional systems are supported by collaborative planning; data meetings; informal observations with feedback or coaching; transparency and visibility; providing teacher PD; building relationships; and distributing instructional resources aligned to state standards (Cox & Mullen, 2023).

In light of school leader as change agent (Acton, 2021), equity is another area of emphasis in the principalship (Cox & Mullen, 2023; Darling-Hammond et al., 2022; Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021; Stephenson et al., 2021). Per PSEL, equity and cultural responsiveness that promote student success is a standard (NPBEA, 2015). In their decisions and actions, equity-minded principals are culturally responsive, inclusive, and antiracist.

Technology is also instrumental in the evolving principalship role (Ermeling et al., 2015; Parsons et al., 2019; Perry, 2023; Sider et al., 2023). In service of the PSEL standard "curriculum, instruction, and assessment," principals encourage technology effectiveness (NPBEA, 2015, p. 12). Effective principals with technology expertise ensure strong instruction and equitable access to computers and the internet. They support teachers' instructional delivery using in-person, hybrid, and/or virtual formats to maximize student options and learning. Principals adapt to and use new technologies, and they foster teachers' online competency (Stephenson et al., 2021).

Regarding terms, *antiracism* refers to an intentional process led by school and district leaders to eliminate institutional racism by, for example, changing instructional policies and practices, and implementing antiracist principal preparation and development (Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021). *Equity* means just treatment and closing disparities, with the understanding that "equity and cultural responsiveness" are dispositions expected of antiracist leaders, per PSEL (NPBEA, 2015, p. 17). Equity is a tenet in practice, research, pedagogy, preparation, and policy, and equity-oriented leadership is a lever used to improve minoritized populations' outcomes as well as to pursue sustainable goals for diverse communities. A professional standard and expectation of leaders, equity concerns a just distribution of resources, cultural recognition and valuing people, as well as sustainability (Lopez

& Jean-Marie, 2021; Stephenson et al., 2021). *Instructional leadership* indicates principals' knowledge and skills for effectively conducting teacher observations and evaluations, providing coaching and feedback to teachers, and implementing data-driven curriculum and instruction (Grissom et al., 2021). *PD* involves learning, continuing education, or career training that is "sustained, intensive, collaborative, job-embedded, data-driven, classroom-focused" (Every Student Succeeds Act [ESSA], 2015; also, Darling-Hammond et al., 2022; Lavigne et al., 2016). *Principal PD* is any professional learning opportunity designed specifically for school leaders that prioritizes instructional leadership and motivates teachers to improve their practices for student benefit (Grissom et al., 2021); learning new knowledge and skills and identity are all dimensions of PD (Jerdborg, 2023). Unlike school districts in many US states, *school division* applies to the Virginia context due to divisions' budgetary dependency on a local government (county, etc.); public K–12 schools, overseen by a school board, are organized into regions by the Virginia Department of Education ("School division," 2024). *Virtual PD* concerns learning via the internet and the modeling of technology use and digital tools (Stephenson et al., 2021).

Our research question was, What does the literature convey about the main influences on effective principal PD that establish the need for equity and antiracism? In the initial literature we reviewed, it became apparent that PD in schools (a) mainly concerns teachers (Buxton & De Muth, 2012; Darling-Hammond et al., 2009; Maher & Prescott, 2017; Parsons et al., 2019); (b) is recognized as a critical component of change that links standards to student outcomes (Darling-Hammond et al., 2009; Knight & Skrtic, 2021); and (c) needs to become more significant and applicable to leadership by incorporating equity and antiracism in principal-specific PD (Cox & Mullen, 2023; Darling-Hammond et al., 2022; Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021; Stephenson et al., 2021). Targets of teachers' PD and virtual learning are curriculum and instruction, student learning, and performance.

Despite its importance, principal PD and foci—instructional leadership, equity and antiracism, educator effectiveness, and student outcomes—attract far less attention than teacher PD (Cox & Mullen, 2023; Darling-Hammond et al., 2022; Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021; Stephenson et al., 2021). Thus, the value of this review is that principal PD and dynamics (school division culture and practices, legislation and policy, etc.) that influence the learning of school leaders is the centerpiece. While the research on principal PD directed at instructional leadership is limited (Herrmann et al., 2019), principal learning has been linked to student gains and reduced teacher attrition (Darling-Hammond et al., 2022; Grissom et al., 2021; Haller et al., 2016; Kraft et al., 2016; Mizell, 2010). However, based on our review of current studies on principal PD in the (post)pandemic era, how principals engage in PD to improve their instructional leadership dispositions and skills lacks thorough examination. As found, principals' sense-making of PD and its most beneficial aspects are not well known (Sahlin, 2023; Westberry & Hornor, 2022). The tendency for leadership preparation (and presumably principal PD) to be geared around evidence based or best practice discourages the search for equity-minded strategies. Forging equity-oriented leadership in antiracist principal PD and preparation for benefitting schools has clearly emerged as an expectation (Darling-Hammond et al., 2022; Diem & Welton, 2021; Gooden et al., 2018; Lopez & Jean-Marie, 2021; Stephenson et al., 2021).

Our motivation as a collaborating educational leadership professor and an assessment specialist/former instructional leader was to underscore the value of PD to the principalship for

navigating changing roles. Just as professional learning is more available to teachers than principals (as our review of extant research revealed), studies of teacher PD overshadow consideration in this regard for principals. There is some coverage about the types of professional learning that can improve principals' instructional leadership and other competencies; the benefits and challenges of participating in quality PD, including virtually; and potential effects on schools. Another issue is that the equity lens for principal PD is not consistently recognized in the sources reviewed, which is an area for future research considering the intensification of school inequities in pandemic times. Hence, this exploration of principal learning and leading for equity was both needed and timely. This contribution is to knowledge of the principalship regarding quality PD, the empowerment of principals to meet their needs through professional learning, and the importance of developing an equity mindset as leaders who influence teacher effectiveness and student performance. Given that state and local education agencies do not reliably distinguish PD that is specific to principals' needs and interests (Steinberg & Yang, 2020), based on our review, more attention ought to focus on principal-specific PD and the changing roles of school leadership.

The research we synthesized draws upon evidence-based practices of principal PD for increasing teacher effectiveness and beneficial outcomes for all students. Professional learning that generates these results is dependent on skillful, equity-oriented leaders who develop self-understanding and advocate for others, and who build capacity and support systems that are antiracist, inclusive, and transformative (Gooden et al., 2018; Jerdborg, 2023; Lopez & Jean-Marie, 2021). Given that greater scrutiny of principals and their role in improving education has resulted from the national attention on student achievement (Darling-Hammond et al., 2022; Grissom & Harrington, 2010), knowledge needs to be shared about principal PD and its potential effects. With reference to principal evaluation standards, school leaders are evaluated not only on their own performance but also that of students. Accordingly, the PSEL specifies that effective leaders develop not only the professional knowledge and skills of staff but also themselves by tending to their own effectiveness and growth (NPBEA, 2015). Creating conditions for student progress, they cultivate an environment of continuous improvement that builds instructional capacity and supports success for each learner (Stephenson et al., 2021).

Methodology

Studies of principal PD mainly in the US context were located using academic databases (EBSCOhost, etc.), web search engines, and educational leadership journals. The sources selected for analysis were in keeping with the premise that all information covered here is endemic to principalship PD. All selected works used some of the search terms. After 178 abstracts were read, 68 scholarly articles and books were examined, in addition to public documents.

Codes were generated from our research question, search terms, and literature results (Table 1).

Table 1
Frequency of Codes in Research Reviewed 2002–2023 (Authors)

Codes	Frequency (High to Low)

| PD *and* Principal	2812
Instructional Leadership *and* Principal *and* Continuing Education	125
Principal Role *and* Student Achievement	85
Online PD *and* Education	74
Virtual PD *and* Education	52
Equity/Antiracism *and* Principal	38
Continuing Education *and* Virtual	7
Virtual PD *and* Principal	4
Hybrid PD *and* Education	4

Coding processes followed established qualitative procedures. Sources were searched for particular words, and the frequency count and the context/meaning were recorded. In this manner, articles and documents with the highest relevance to this review (Darling-Hammond et al., 2022; ESSA, 2015; Lopez & Jean-Marie, 2021; Stephenson et al., 2021, etc.) were identified and coded by both researchers. The results were organized in a data summary matrix that logged author/year, purpose/goals, methods/data sources, themes/findings, and implications; in it, color coding was used to track methods, findings, and implications. Categorically aggregating the data produced findings and led to implications. Sources were also cross-referenced with the research question.

Limitations of this review are that it is not international or comprehensive in scope. The implications are restricted to a single country. Also, certain ideas are not explored in detail: principal PD guided by tenets—equity, antiracism, and cultural competency; PD designed for novice versus experienced principals; and applicable surveys, interview protocols, and other tools reported in research. Successful PD programs, features, and preferred virtual platforms and digital tools are also not examined.

Conceptual Framework

Our conceptual framework for this review study (Figure 1) presents a causal model of various factors influencing principal development. These influences are Policy, Change, Leadership, Equity, Divisions, Benefits, Barriers, and Impacts. Darling-Hammond et al.'s (2022) systematic literature review focused on programmatic elements of effective PD for aspiring and practicing principals (e.g., mentoring/coaching) and associated experiences for participants, whereas our analysis looked at the main influences that drive principal PD on-the-job, with student achievement as the *raison d'etre* and thus overriding goal. Similarly, Darling-Hammond et al. (2022) acknowledged the role of policy for driving quality PD programming, as well as "equity-oriented leadership" in developing principals to meet diverse student needs.

Figure 1
Influences on Principal Development (Authors)
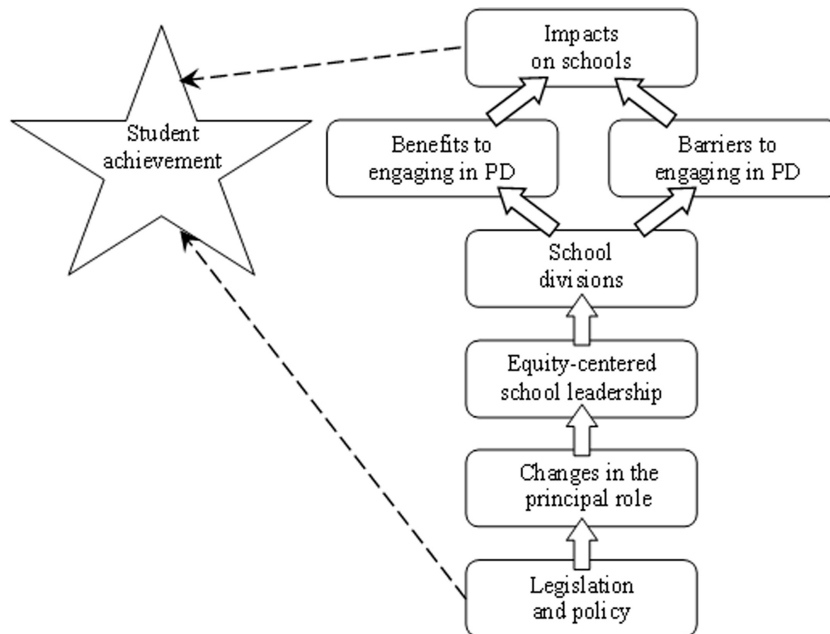
We designed our figure to visually identify and connect crucial influences on principal-specific continuing education while maintaining student success as the focal point. As depicted, *legislation and policy*—a foundational catalyst—prioritize *student achievement* and, to this end, propel *changes in the principal role*, shape *equity-oriented school leadership*, support principal leadership by *school divisions* for which there are *benefits to engaging in PD* as well as *barriers to engaging in PD*, and guide measurable improvement and *impacts on schools* (Darling-Hammond et al., 2022; ESSA, 2015; Grissom et al., 2021; Gooden et al., 2018; Levin et al., 2020; Lopez & Jean-Marie, 2021; Stephenson et al., 2021).

When statutes and policies requiring principal PD are not fully implemented, principals may falter in their learning and effectiveness (Haller et al., 2016; Manna, 2015; Rodriquez, 2019). Consequently, to satisfy the expectations for delivering effective principal PD, school divisions are required to determine approaches for meeting policy requirements and offer equity-oriented, more comprehensive, and differentiated learning based on need (Acton, 2021; Darling-Hammond et al., 2022; Lavigne et al., 2016; Westberry & Zhao, 2021; Zepeda et al., 2014). The role of divisions/districts is important in determining PD opportunities for principals fitting their contexts and targeted areas of growth, including how they understand and operationalize equity. The gains are expected to create more effectual, equity-minded, and skilled leadership on the part of principals (Darling-Hammond et al., 2022; Grissom et al., 2021; Lopez & Jean-Marie, 2021; Stephenson et al., 2021). Education leaders and researchers may find our framework useful.

Findings

In this discussion of findings, we address our research question. To clarify, two assumptions held across some or all studies analyzed: (a) principals' PD is essential for their effectiveness in such crucial areas as instructional leadership, equity, and technology, and (b) planning and implementation must be intentional to develop organizational capacity that benefits

stakeholders and sustains outcomes. The sources acknowledging equity-oriented leadership relative to principals' changing roles mostly had a recent publication date.

Principal PD Considerations and Importance (Finding 1)

A common refrain in the literature is that effective principal PD is coherent, focused, and designed to arrive at expected outcomes. Such professional learning embeds activities that build upon previous PD, is linked to standards and assessments, and is personalized around educators' needs and goals. Thoughtfully planned and implemented quality PD elicits improvements in school performance (Meyers et al., 2023).

In addition to being well planned, leadership learning should be ongoing. To increase educator proficiency and desirable results for students, PD for principals includes research on change and sustained support for implementation. Drawing upon PD for teachers with implications for leaders, according to Darling-Hammond et al. (2009), PD is more likely to be seen as effective if it is sustained and involves considerable contact hours, which encourage collaboration and active engagement. Improvements in student learning result from follow-up after the main PD activity (Meddaugh, 2014). To sustain learning, PD should be more comprehensive, incorporated into the workday, connect knowledge and application in practice, and involve inquiry, criteria not met by a separate activity unrelated to the setting (Zepeda et al., 2014). Teachers are more inclined to implement new practices when support occurs during classroom implementation (Darling-Hammond et al., 2009). Likewise, quality PD engages principals in thinking about instructional strategies that matter, with opportunities for reflection, coaching, and feedback (Darling-Hammond et al., 2022; Lavigne et al., 2016).

Improved leadership has the potential for a strong return on investment in students and their learning (Grissom et al., 2021; Herrmann et al., 2019; Manna, 2015). Notably, effective principal PD can increase the capacity to attract, retain, and develop teachers, which is crucial given the national crisis around teacher shortages (Kraft et al., 2016; Levin et al., 2020). Teachers are more likely to remain in schools led by principals whose learning from PD benefits the organization and supports their instruction (Levin et al., 2020). Because teacher turnover impacts students academically (Cox & Mullen, 2023), improvements in school leadership help to ensure retention and quality teaching and learning (Kraft et al., 2016).

Changes in Principal Role and Reasons for PD (Finding 2)

Illuminating why PD is needed specifically for principals, researchers referenced such pervasive realities as accountability for student performance necessitating strong instructional leadership (e.g., Haller et al., 2016). Accompanying these changing expectations of the role is an adjustment in the skills leaders need to know and how they utilize their time (Grissom et al., 2021). Principals need the knowledge, mindset, and skills to support effective teaching and learning that result in improved student performance. In order to fulfill instructional leadership responsibilities, instead of focusing solely on managerial tasks, they must be intentional with how they use their time. The principalship role is complicated and demanding. As school leaders invest more heavily in guiding and evaluating teachers' performance, including their online competency and digital literacy, their workload expands, possibly without extra resources (Argyropoulou et al., 2021).

To determine how principals spend time on the job, Lavigne et al. (2016) analyzed results from the Schools and Staffing Survey. The responding principals (N = 5,950) reported "spending 31% of their time on internal administrative tasks, 27% on curriculum and teaching-related tasks, 23% on student interactions, and 13% on parent interactions" (p. 4). This finding demonstrates what is generally known—that principals are pulled in different directions and that consideration should be given to the types of support and training needed for curriculum and instruction tasks.

Types and Practices of PD Benefitting Principals (Finding 3)

The research reviewed also covered some types and practices of PD beneficial to principals. Customized PD is advantageous for developing the knowledge, mindset, and skills to support effective instruction and for providing education around key areas of administration—managing people, processes, and data (Grissom et al., 2021; Levin et al., 2020). To perform well in these ways while demonstrating problem-solving and distributed leadership, leaders need targeted learning opportunities (Meyers et al., 2023) to help with implementing state goals and initiatives for which states and divisions must assume an active role in funding (Manna, 2015).

Although short-term principal PD is common, the complexity of principal leadership requires greater exposure, which may be why longer term or immersive approaches to learning appeal to some principals. Darling-Hammond and coauthors (2022) described these types of PD as "individualized, one-on-one support provided by a coach or mentor"; "opportunities for networking with peers, often in structures like professional learning communities" and sessions with a discernible impact on learning and professional networks; and "opportunities for authentic [learning]" (p. 23). More needs to be known about how principals decide which type of PD to engage in and the effects of participation on personnel and students (Lavigne et al., 2016). Considering how much schools have changed and how quickly, limitations to the Lavigne et al. study were outdated information from principals (collected 2011–2012) and self-reported data.

A qualitative study determined principal PD opportunities in four school divisions in Georgia and adult learning principles. Zepeda et al. (2014) discovered that these systems, which varied in size, demographics, and per capita income, evidenced being purposeful about job-embedded and action-based principal PD. Formal and informal mentoring were valued forms of PD, delivering "just in time" learning responsive to leaders' interests. Principals recognized that changes in accountability demands meant that their approaches needed to be more ongoing, data-informed, and strategic. Because the professional learning received was mainly from the district, it was recommended that school leaders be given more autonomy in the areas of content, learning approaches, delivery type, pace, and goals. Researched practices addressing quality formal learning opportunities with self-directed options were encouraged.

Thus, job-embedded, in-service learning opportunities can have positive impacts when focused on high-leverage practice areas and unique problems (Grissom et al., 2021; Meyers et al., 2023). Whether and how school districts support principals through PD can determine their capacity to be successful in their roles (Darling-Hammond et al., 2022). Inservice school leaders who gained from sustained coaching and mentoring have been rated more effective than their counterparts lacking this on-the-job learning (Grissom & Harrington, 2010). These beneficiaries of networked PD communities reported having learned new ideas, becoming more reflective about their leadership, and experiencing vitality through connectedness (Coenen et al., 2021;

Levin et al., 2020). As Lazenby et al. (2020) found, experienced principals value networking as a way to learn from peers about managing changes to their roles. Personal connections and professional networks most positively influenced learning at work (Acton, 2021).

With the amplification of accountability measures, school districts have made PD more comprehensive and differentiated around needs (Acton, 2021; Westberry & Zhao, 2021; Zepeda et al., 2014). When principals do not experience quality PD student learning can deteriorate (Mizell, 2010). Results from 1,311 surveyed principals in South Carolina revealed that interest in PD was on understanding "[ways to use] data to inform instruction"; "[a full range of] instructional leadership (alignment, assessment, and observation)"; and "how to effectively monitor progress" (Westberry & Zhao, 2021, p. 11). Yet, as Acton (2021) found, leading the change process on behalf of student learning can be missing from PD sessions for principals.

Survey research from the National Center for Education Statistics identified the kinds of PD attracting principal interest and relative to school grade and poverty level (as cited in Lavigne et al., 2016). Data from 6,360 principals were analyzed using logistical regression. Almost all (99%) of the respondents had experienced some form of PD during the 2011–2012 school year, with conferences and workshops most commonly used to advance learning in principal networks.

PD enhances school leaders' knowledge and skills, process of becoming equity-centered, and ideas for improving culture (Jerdborg, 2023). Endeavoring to improve instructional practice, principals motivate teachers to attain higher standards and become more efficacious in support of student outcomes. Also, they allow teachers choice and flexibility, to make small incremental changes, and lead by example. When principals have the tools and resources they need, including PD that works, they can emerge as a change agent (Acton, 2021; Ni et al., 2016).

Barriers to Engaging in Principal PD (Finding 4)

Additionally, the studies we read described barriers of principal PD. Importantly, unless a school district is race conscious, resources will not be used for principal and educator PD that fosters "cultural competency." As argued by Diem and Welton (2021), "capacity building and development of more racially equitable practices" depend on district culture. Districts that invest in "racial equity efforts," for example, offer "culturally responsive" learning experiences for diverse student populations (p. 29). In places where politics are racially hostile, school leaders will not be asked to examine data for evidence of inequity along the lines of racial differences in student achievement, school discipline, and structures and practices. Principals who are not learning about minoritized groups' value and cultural assets through antiracist PD may fail to dismantle deficit thinking in their own schools. In contrast, those who lead with equity socialize educators to bring an asset-based understanding of students to the classroom. Comparing school districts in several US states, these researchers narrated district leadership resistance to equity, antiracism, and transformation and commitment to these dynamics.

Also as confirmed in research, nationally, principals want to participate in professional learning, but they encounter workload expectations and overwhelming demands, among other difficulties (Darling-Hammond et al., 2022; Zepeda et al., 2014). School leaders who focus on helping teachers to adjust and develop pedagogically may neglect their own learning. A profound example occurred during emergency remote teaching. In Greece, principals were, like others

around the globe, swamped with making their faculty competent enough to instruct online (Argyropoulou et al., 2021).

Obstacles to principals' involvement in PD also include incompatible working hours, cost of training, inadequate support from employers, and lack of targeted or timely opportunities (Rodriguez-Gomez et al., 2020). Levin et al. (2020) found that 84% of elementary principals surveyed experienced time limitations, inadequate coverage for leaving the building, insufficient financial support, and funding restrictions. Commuting time is another factor that can affect participation in PD (Coenen et al., 2021). The ability to operate remotely via the internet made possible virtual alternatives to place-bound PD (Levin et al., 2020; Zepeda et al., 2014).

PD formats typically default to conferences, workshops, or one-time sessions for principals despite the fact that sustained, on-the-job PD that emphasizes problem-solving and networking and is recommended. Per principals' reports, while they can access a variety of topics through workshops and conferences, these venues may not offer collaborative or applied PD opportunities (Darling-Hammond et al., 2022; Lavigne et al., 2016). Honig (2012) found that district supervisors did not have the time to target support to each principal, which can have a ripple effect. Schools with high student failure and new principals showed a reduction in the time supervisors spent with principals whose instructional leadership skills were weak. Principals planning to leave the field have reported that their districts did not meet their PD needs (Levin et al., 2020).

Virtual PD Platforms and Their Value (Finding 5)

Virtual platforms used for principal PD and their value was another thematic finding. The pivot to online learning for K–12 students triggered by COVID-19 had an effect on professional learning and its delivery. Virtual PD occurred out of necessity, with leaders and teachers seeking to adjust to online platforms and digital learning in remote contexts (Charteris et al., 2021).

Advances in technology and increased internet access enable a fuller implementation of PD in online formats for personalizing leaders' learning (Buxton & De Muth, 2012; Charteris et al., 2021; Stephenson et al., 2021). To deliver PD remotely, a digital meeting platform (Zoom, etc.) is used to allow for personal and group messaging, file sharing, and archiving. Synchronous modalities feature live webinars, chat messaging, and conversations with presenters and participants, while modules, recorded videos, and discussion boards typify asynchronous modes (Gottlieb et al., 2020; Parsons et al., 2019).

Of relevance is the fact that benefits of participating in virtual PD are numerous and include reduced costs in travel and facilities, expanded reach, flexibility of scheduling, adaptability of resources, and access to expertise (Buxton & De Muth, 2012; Charteris et al., 2021; Maher & Prescott, 2017; Parsons et al., 2019; Sider et al., 2023). These gains vary based on format, time, content, and audience. As determined by Eddy et al. (2021), ongoing asynchronous and synchronous sessions allow participants to improve their practice over time.

By sponsoring virtual PD, school divisions can attract more participants in rural or remote areas for whom in-person attendance would be impractical (Buxton & De Muth, 2012; Maher & Prescott, 2017). The virtual platform also allows principals to learn from experts and peers who are otherwise not accessible (Lazenby et al., 2020). With the decrease in funding for assistance to principals, high-quality online formats serve as a remedy and opportunity to connect, with

extended access to resources (Maher & Prescott, 2017). By making asynchronous resources available in advance, Eddy et al. (2021) found that participants could explore them and better engage during synchronous sessions. Further, it can be more manageable for educators to maintain connections and share knowledge when learning remotely (Charteris et al., 2021), and virtual PD makes it easier to provide the time and opportunities needed for professional learning with continuous follow-up (Darling-Hammond et al., 2009). Thus, online principal learning can aid sustainable change—a crucial point (Darling-Hammond et al., 2022; Lavigne et al., 2016).

Increased engagement and earlier and higher levels of coconstruction are other attributes of virtual PD (Seddon et al., 2012). By reviewing the chat and transcription of recorded virtual PD sessions, Seddon and team identified types of interactions and compared online asynchronous and synchronous interactions. In contrast with face-to-face sessions, webinars allowed for input through text chat, and there were shorter wait times bolstered by instant sharing of reflections.

Leveraging Virtual PD to Support Impact (Finding 6)

A new area of research concerns virtual PD and how it might be leveraged to support principals' impact in their schools. Sponsorship of various PD opportunities, including online coaching, attracts school leaders' attention. Ermeling et al.'s (2015) survey study determined that after a blended principal coaching program pivoted online, it proved both active and effective in five schools. The district sponsored the program with positive results for 2 years before offering it virtually due to funding issues. A finding was that blended models are worth considering for maintaining targeted PD and principal coaching. Aptly, the research team identified as a quality control readiness for online support and verifying this before implementation.

PD delivered remotely for principals provides expanded opportunities for self-reflection and internalization of learning and connects these leaders beyond their districts (Irby et al., 2022). Such task-specific PD targets instructional leadership competencies and learning from external experts. The use of virtual "choose your own adventure" cases has given principals time to develop decision-making skills in scenarios relevant to their roles (Sider et al., 2023).

Like place-bound communities of practice, virtual variations for principals can produce long-term, meaningful collaboration and personalized, relevant learning. Lambert and Bouchamma (2021) reported that participants in these reflective learning communities experienced such benefits as a sense of belonging, and that geographical and other differences allowed for varying views and enriched experiences. Meant for school leader education, these communities have focused on real-world problem-solving and networking, resulting in reduced isolation on the job and sustained, relevant participation in PD. Creating a bridge between theory and practice, instructional leadership and other strategies are formulated, implemented, and assessed for school improvement purposes (Coenen, 2021; Darling-Hammond et al., 2022).

In addition to structured online PD opportunities for principals, the use of social media for informal PD has expanded. Daly et al. (2019) explained that formal PD does not always suit principals or fit their unique contexts, which leads to informal connections with experts and colleagues. Social media provides low- to no-cost, just-in-time access to resources, and a professional learning network across the globe (Daly et al., 2019; Lazenby et al., 2020).

Regarding strategies for implementing virtual PD, facilitators will want to determine how to organize and conduct sessions and related opportunities to maximize engagement and

learning. One strategy for carrying out remote PD is to create an environment that fosters communication and codesign (Charteris et al., 2021). A sense of being together and involved is needed in virtual environments. Activities help individuals identify with the community, experience trust, communicate with purpose, and develop relationships. Social interactions can be forged through participants' sharing of work; asynchronous discussion boards; and real-time conversations through videos, chats, and social media. Relationships can expand into rewarding professional networks (Parsons et al., 2019).

Another consideration for facilitators is to determine which format for virtual PD will most likely further the intended outcomes. Growth in new and emerging technologies has ignited a vast range of options (Sider et al., 2023). Topics of interest to principals should be a feature of any PD opportunity, as reinforced by research in Indonesia on the learning for leaders (Sukarno & Sumarwati, 2020). In a 2023 study by Sider and coauthors, virtual formats enabled pedagogical flexibility and promoted understanding during principals' PD sessions.

Virtual and hybrid PD is expected to last given the need for it and advantages (Ermeling et al., 2015; Parsons et al., 2019; Perry, 2023; Sider et al., 2023). The case has been made that individualized approaches to PD and self-selected options are appropriate for principals and that online connectivity makes possible choice and personalization (Sider et al., 2023; Zepeda et al., 2014). Even in pre-pandemic times principals were supposed to receive evidence-based PD and have access to technology-powered forms to promote their meaningful learning, digital literacy, and capacity for leading effective instruction and learning outcomes (Stephenson et al., 2021).

Implications and Further Research

Some implications and directions for further research were culled from the sources. As argued, the quality and sustainability of principal PD is a persistent issue needing examination. Confirming that principals' participation in PD matters for student outcomes, Meyers et al. (2023) encouraged research on programs that develop leadership capacities. Similarly, Darling-Hammond et al. (2022) called for studies that identify professional learning approaches for leaders that are effectively used in practice. More needs to be known about design-based, research-informed continuous improvement models, programs, and processes for advancing principal PD and their performance (Herrmann et al., 2019). Online technologies provide external assistance to school leaders and are more cost effective; however, Ermeling et al. (2015) found no research on sustained virtual assistance for principals. Therefore, studies of virtual principal PD in post-pandemic times should include examination of online platforms for principal engagement and benefit for self and stakeholders (Irby et al., 2022; Sider et al., 2023).

Importantly, equity-oriented leadership is expected to anchor principal PD in the moral purposes of schooling, whether this learning occurs in-person or online (Stephenson et al., 2021). Equity requires special and ongoing consideration in the development of principals and their impact on schools. A takeaway from Stephenson et al.'s investigation of principal leadership in virtual spaces is that studies of school leaders' "equity of access" often omit the "meaningful use of technology"; conversely, research on their experience and modeling of technology tends to leave out "the equity component" (p. 48). As such, a direction for researchers of principal online learning is to bear in mind relationships between equity and technology and in relation to instructional leadership.

Equity-minded, antiracist PD is particularly important to cultivate in these divisive times (Lopez & Jean-Marie, 2021), given the legal pushback from some state legislatures and boards of education on equity and critical race theory (CRT). To support the PD and capacity building of principals in their response to increased diversity and ongoing oppression, Lopez and Jean-Marie (2021) used anti-Black racism in school as a lens. Based on interviews in Canada and the United States of 41 Black and white school leaders, these researchers created the action-oriented framework Name, Own, Frame, and Sustain (NOFS) intended for practitioners as they challenge racism. They drew upon CRT, their study, and experiences as Black faculty to produce this framework. Enacting NOFS's tenets involves naming anti-Black racism, "owning the issue," framing ways to purposefully disrupt racist policies and practices, and sustaining the work of equity and justice through critical reflection, action, and collaboration (p. 58). This model offers direction for school leaders and PD that promotes consciousness raising, critical leadership, and praxis.

About the issue of powerful learning in virtual spaces and equity, a question for educational leadership faculty is, how do equity-minded leaders leverage learning technologies to improve schools, specifically the performance of teachers and students? To bring about principals' "meaningful powerful learning" and see it take hold in schools (and the research), it is not enough to expose them to PD opportunities and online tools, asserted Stephenson et al. (2021, p. 5). To create the conditions for and benefits of "equity-focused leadership," divisions must provide principals PD that is grounded in daily practice (p. 9). They further explained that to ascertain whether the learning in virtual PD contexts does, in fact, reflect issues of educational equity, processes can be monitored. Principals in low-resourced schools with higher concentrations of vulnerable students may have the most to gain from quality PD (Darling-Hammond et al., 2022).

To support the development of principals' dispositions and skills, we imagine that the "mixed reality simulations" for "difficult parent conference(s)" used by an educational leadership program in New England, USA, could be rethought as equity-themed scenarios and debriefings (Piro, 2023, pp. 23, 26). The "debriefing protocol," which focuses on reactions, assessment, application, and change, could be adapted for this purpose.

Leadership standards can be used more effectively in preservice programs to foster quality programming around continuity in opportunities to learn and vigorous clinical experiences (Darling-Hammond et al., 2022). Notably, advantageous learning for principals is also reported in emergent antiracist preparation research. One such program guided the transformative learning of a mainly white preservice cohort around four values: "gaining and integrating new knowledge, examining self, (re)envisioning the world, and taking antiracist action" (Gooden et al., 2018, p. 7). Practicing principals could gain from the interactive approach to antiracism; examination of leadership attitudes, choices, and behaviors; new awareness of self/other/world (Jerdborg, 2023; Sahlin, 2023); and ways to navigate different cultures (family, district, state, and so forth). Antiracist PD for principals could benefit from this value structure.

Finally, programs and opportunities that facilitate principals' leadership capacities and school impact are worthy of exploration. Pursuing linkages among principal PD, equity, student gains, and teacher effectiveness and retention could shed light on the growth of the leader and benefits. Supporting principals' changing roles as equity-oriented leaders in the workplace is advisable, with positive signs to this effect in healthy district cultures (Diem & Welton, 2021).

District PD for principals who are from minoritized groups (women, people of color, etc.) or in distressed schools with underserved students is ripe for further study (Tran et al., 2023).

Conclusion

Our article contributes knowledge of principal PD that accounts for the changing role of school leaders in which instructional leadership, equity, and technology are paramount. To provide a window onto interrelated dynamics involved in student achievement, we presented our Influences on Principal Development framework. For this review study, we also addressed what research suggests about the main influences on effective principal PD that establish the need for equity and antiracism. As determined, principal-specific PD deserves more attention so that principals can serve as equity-oriented, antiracist, culturally competent leaders on behalf of each learner's outcomes. With the political division that has seeped into the nation's schools, the importance of developing equity-minded leaders who impact teacher effectiveness and student performance cannot be underestimated.

The pandemic plunged us into teaching and learning remotely. Given the principal's impact and yet alarming attrition, professional learning around crucial skills and dispositions that promote leading effectively is essential. Now it is time to pursue the study of principal development with attention on equity-oriented leadership as a path of justice for the future of school leadership.

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