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Meta-synthesis of school leadership competencies to support learner-centered, personalized education

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This study analyzes the corpus of research on how K–12 school leaders foster deeper learning by creating learner-centered, personalized learning opportunities for students. We used the *Leadership Competencies for Learner-Centered, Personalized Education* developed by Jobs of the Future (2017) as our conceptual and analytical framework to analyze 42 peer-reviewed empirical articles. The findings detail how school leaders build structures to support learning-centered, personalized experiences for the students they serve.

KEYWORDS

deeper learning, personalized learning, student agency, systematic review, meta-synthesis, leadership competencies

Introduction

The concepts of a *school* and an *education* are becoming more personalized. Schools are becoming more authentic and more human-centered. They are expanding to be more action-oriented, performance-focused, digitally relevant, and democratically infused. Little is known, however, about how leaders develop such learning environments, and the core leadership competencies needed to do that work. This article systematically lays out the corpus of knowledge around leading for personalized learning.

Personalized learning is at the root of deeper learning, which [Richardson et al. \(2024\)](#) defined as,

1. Placing an emphasis on applied creativity, critical thinking, and problem-solving,
2. Supporting high levels of student agency, control, ownership, voice, and choice,
3. Creating opportunities for students to engage in authentic, real-world work in local and global communities, and
4. Adopting robust technology infusion to support teaching and learning.

The notion of deeper learning is drawn from the work of [Mehta \(2022\)](#), who describes deeper learning as a shift to a new grammar of schooling focused on student agency, relationships, a sense of purpose, creating worthwhile projects, and loving students holistically. These concepts of deeper learning are each rooted in the belief that kids need choices, agency, and personalized learning experiences. At the core of this shift toward deeper learning is personalized learning. As such, through this research, we sought to describe how the field has investigated leading schools for personalized learning.

Leadership matters

Hallinger and Heck (1998) reviewed approximately four dozen studies and found both direct and indirect effects of school leadership on student outcomes. Creemers and Reezigt (1996) also found that school leadership explains 3–5% of student learning variation, approximately one-fourth of the total variation in student learning explained by all school-level variables. Further, a meta-analysis conducted by Waters et al. (2003) identified 21 leadership skills and found an average 10% increase in student test scores for those principals who improved by one standard deviation in all of these skills. In short, leadership is a critical factor in establishing the conditions necessary for successful student learning.

In their landmark research review for the Wallace Foundation, Leithwood et al. (2004) found that school leadership highly impacts student learning outcomes, second only to classroom instruction. The authors recognized that “there are virtually no documented instances of troubled schools being turned around without intervention by a powerful leader” (p. 5). They also noted, “in order to be successful, leaders need to respond flexibly to their contexts” (p. 22). In short, school leaders matter when it comes to student learning.

Transformational leaders have an inherent and unshakable belief that both *different* and *better* are achievable and then work tirelessly to alter the schooling experience for students and staff. Utilizing a growth mindset, transformational leaders tap into all school members’ human, social, decisional, and professional capital. In a meta-analysis of 28 independent studies focused on transformational leadership, Chin (2007) found that transformational school leadership can positively impact school effectiveness, student learning outcomes, and educators’ job satisfaction. Leithwood et al. (2004) noted that transformational leaders keenly understand their schools’ organizational, demographic, and policy contexts. These leaders focus on vision-setting, building people’s capacity, and organizational redesign.

These modern upgrades of schooling are not emerging by chance. They are purposeful responses to the inherent incongruities as we try to map a historical and analog learning and teaching model onto today’s technology-suffused, global society. These new school structures and required leadership behaviors have emerged from ongoing dialogue about college- and career-readiness, enhanced life success, and a more holistic understanding of desired learner outcomes. As schools shift toward new student and graduate profiles, they challenge and reform the core structures of the traditional, standardized school model. Leaders of schools focused on the student experience allocate time differently, regularly pilot model classrooms, offer new choices to families, adjust underlying policies, and engage in many efforts that transform schools with the student experience in mind.

In this study, the researchers wanted to understand what has been empirically studied around the concept of leading schools for personalized learning. To do this, we started with the core leaders’ competencies required to create learner-centered, personalized educational experiences. As such, this meta-synthesis of the literature on leading personalized learning focused on the empirical body of research to better understand what we know about leading these progressive, innovative learning environments.

Conceptual framework

The *Leadership Competencies for Learner-Centered, Personalized Education*, published by the *Jobs for the Future and Council of Chief State School Officers* (2017), served as our conceptual framework. These are competencies K–12 educational leaders “must master in order to build and sustain learner-centered, personalized schools and learning environments” (p. 4). This framework served as a guide to understanding what research has been done on leading deeper learning in K–12 schools by enacting personalized learning.

The framework contains one foundational domain and three supporting domains. The foundational domain of *Vision, Values, and Culture*, stresses “the leaders’ ability to establish a learning environment where all students graduate with the knowledge, skills, and dispositions they need to succeed in college, career, and civic life” (p. 21). The second domain, *Personal Skills, Mindsets, and Values*, focuses on the need for school leaders to monitor the education environment, as well as themselves, to maintain and create a personalized, equitable, learner-centered school climate. The third domain is *Capacity Building for Innovation and Continuous Improvement*. It describes what school leaders who support deeper learning must do to improve their capacity to build a learner-centered environment. The fourth and final domain is *Shared Responsibility and Structures for Continuous Improvement, Innovation, and Assessment*. This domain focuses on creating structures, building systems, and enacting communication structures that make deeper learning possible. These domains guided this meta-synthesis of literature.

Methodology

The researchers began by limiting the searches to understanding what has been captured in the peer-reviewed, empirical literature around leading for personalized learning as informed by our conceptual framework. We searched the ERIC database for articles on leadership competencies for learner-centered, personalized education based on the framework by *Jobs for the Future and Council of Chief State School Officers* (2017). We chose ERIC because educational leaders widely use this database and, as such, is the go-to repository for finding research on problems of practice. We began searching the database in October 2020 and completed the searches in March 2021. We conducted the exact search in November 2022 to update our database. Our searches were not delimited by date in an effort to capture *all* studies available.

We pre-determined the criteria of inclusion and exclusion before beginning the database searches. Our first inclusion criterion was that an article must be in a peer-reviewed journal; this was done to ensure a minimum level of quality. Our second inclusion criterion was that the article had to be empirical. We excluded commentaries and opinion pieces. Our third criterion was that the article must have been written in English. This was set due to the researchers’ language restrictions and to ascertain whether the research was consumable to a Western audience. The fourth criterion was that the article had to focus on K–12 school leaders.

The first search item was the population (e.g., principals or administrators). Synonyms were included using OR combinations to capture various job titles. The second search term was the domain of the framework. The third search term focused on capturing the

dimension of that framework. Limiting each search by these parameters, we systematically searched for every domain and dimension that spoke to research on or around K–12 school leaders.

We identified non-negotiable terms or constructs for each dimension and maintained that in each search while adding the other words into an OR combination. The fourth search term was the overall topic of learner-centered or personalized education. Searching for these terms with an AND operator, we adjusted the search terms to be more specific if we felt the results were too broad. Then, we went through the abstracts to determine relevance. We were careful to over-capture initial results to be as comprehensive as possible. After deciding the article was applicable based on the abstract, we saved the full texts of these articles using Zotero, a bibliographic citation manager. Afterward, we read each article to determine if a study was in scope.

We then conducted an expanded search in ERIC with search terms not explicitly mentioned in the wording of the domains. For example, some searches contained phrases such as *leadership for deeper learning*; *deeper learning in leadership*; *deeper learning*; *learner-centered*; *student-centered*; *problem-based learning*; *competency-based learning*; *graduate profile*; *student agency*.” After removing duplicates,

we captured 265 potential articles. After a careful screening at the abstract level, we were left with 64 articles that seemed to be relevant based on the abstract. Both researchers read each article and met to discuss if they were within scope. Twenty-two articles were excluded for being not empirical or not focused on explicit leadership competencies, leaving us with 42 articles that were applicable. Figure 1 details the PRISMA search process.

Table 1 details the number of peer-reviewed empirical articles per domain. Note that a single article could be classified in various dimensions and domains. Thus, the total count (64 domain hits) is larger than the total number of articles ($n = 42$). Figure 2 details the number of articles published by year.

Results

Domain 1: vision, values, and culture

The foundational domain for personalized learning leadership competencies revolves around the vision. We located 15 empirical

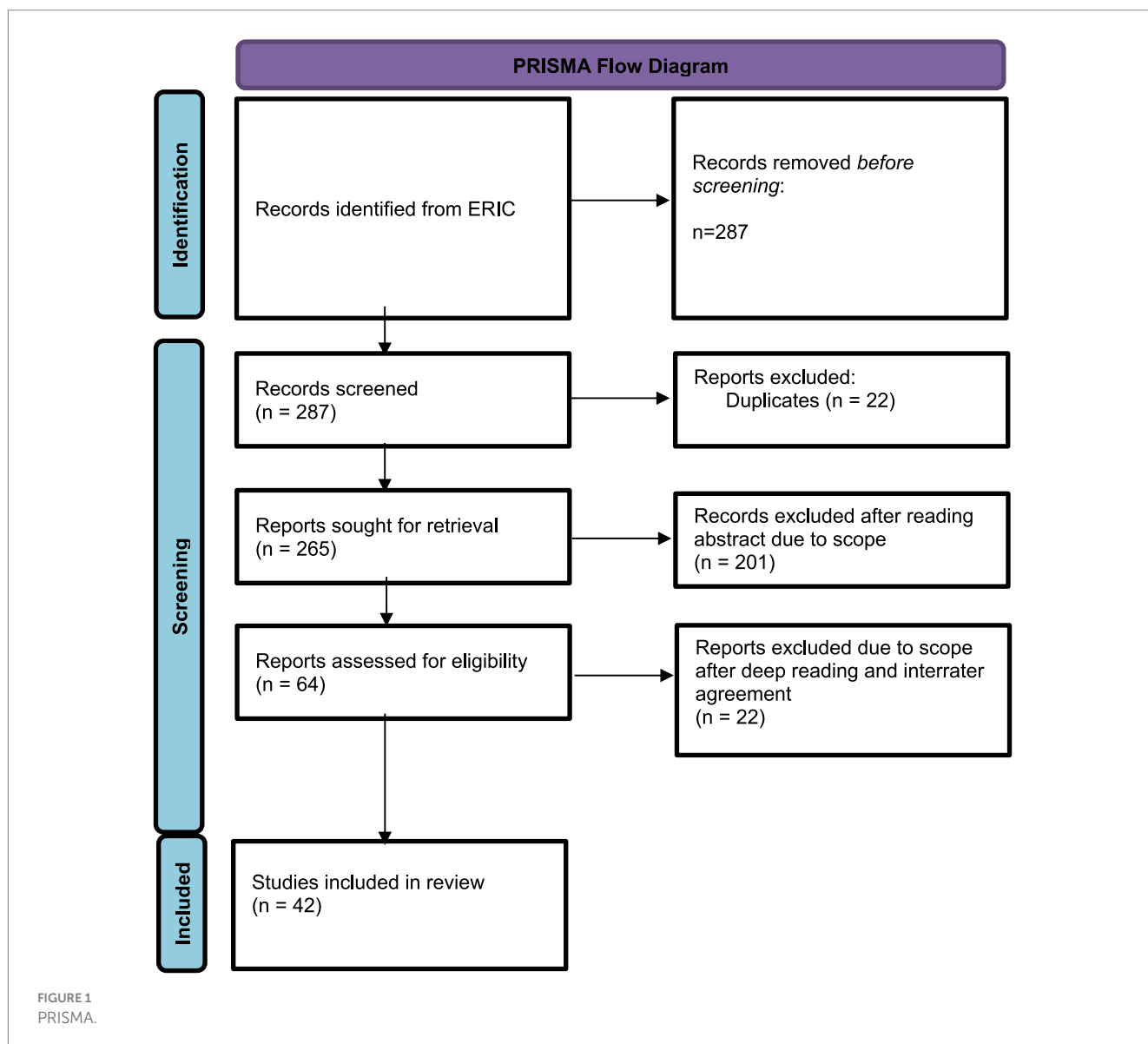


TABLE 1 Number of empirical articles per domain.

Domain	Article from initial search	Article from expanded search	Total
Vision, values, and culture	11	4	15
Personal skills, mindsets, and values	10	2	12
Capacity building for innovation and continuous improvement	11	3	14
Shared responsibility and structures for continuous improvement, innovation, and assessment	22	1	23
Total number of domain instances	54	10	64

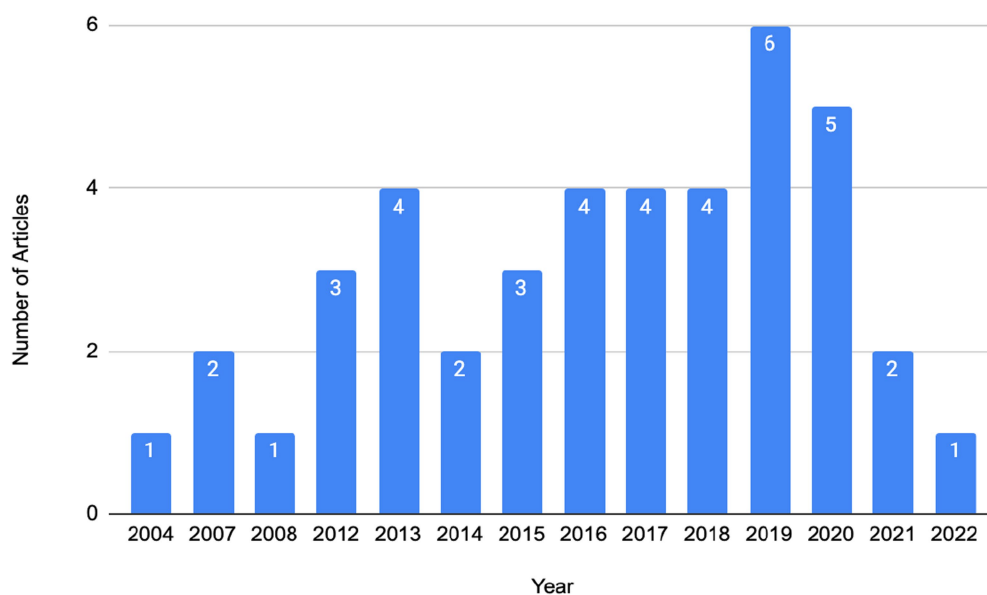


FIGURE 2
Total number of peer-reviewed articles by year.

articles that fell into this domain. Below, we summarized the articles by each dimension.

Vision—dimension 1: create and share an inclusive, learner-centered, personalized approach

Eight articles focused on creating a shared vision of student learning that focused on inclusive, personalized approaches to learning. Researchers mentioned personalized learning as essential to creating a shared vision (see [Billings, 2012](#); [Gibney et al., 2017](#); [Kallio and Halverson, 2020](#)). [Gibney et al. \(2017\)](#) conducted a case study of four high schools in Fort Worth, Texas, where staff and students created a shared vision of school policies and school culture by building structures and processes aimed at increasing teacher and student efficacy, being critical aspects of leadership for personalized learning. Additionally, [Gibney et al.](#) noted how these leaders prioritized personalized learning by profoundly understanding student needs, which informed the vision.

[Kallio and Halverson \(2020\)](#) and [Billings \(2012\)](#) examined personalized learning vis-a-vis technology integration. [Kallio and Halverson](#) conducted a qualitative study to examine how leaders

solicited staff and student input when determining what technology to utilize for personalized learning. The researchers noted school leaders should empower educators and students when implementing whole-school reforms, especially when redesigning organizational tools and routines. In contrast, [Billings](#) took a longitudinal approach and analyzed 5 years of annual surveys to see how schools maintain technological growth. The findings indicated that school leaders increasingly used technology to differentiate instruction and assessment. [Billings](#) found that learning management systems are increasingly used by school leaders for instructional differentiation. In another longitudinal study, [Law and Liang \(2019\)](#) conducted a case study of 10 special-needs schools to examine the implementation of e-learning. The researchers found a shared vision among school leaders, combining personalized learning with e-learning, led to the students performing at the same level as their mainstream peers.

[Jones et al. \(2013\)](#) and [Óskarsdóttir et al. \(2020\)](#) found that inclusion was a crucial element in setting a vision around personalized learning. [Jones et al.](#) found that when district leaders encouraged their learning specialists to incorporate inclusive practices in the school vision, they increased their abilities and confidence to incorporate inclusive practices. [Óskarsdóttir et al.](#) conducted a cross-national

project in Europe to determine how school leaders met the needs of all students. The researchers found that leaders play an important role in implementing and developing a strategic vision of inclusion through instructional leadership, transformational leadership, and distributive leadership. The authors concluded that when leaders create a vision for inclusion, it should be learner-centered and give both students and teachers agency to democratize the process.

Nehring and Szczesiul (2015) examined four secondary schools in Northern Ireland, focusing on how leaders created a vision around personalized learning skills such as critical thinking and collective responsibility for learning within classrooms and throughout the school. The authors found that when school leaders prioritized personalized, deeper learning as their focus, their students were more likely to develop skills like critical thinking and perform well on traditional tests.

Finally, Boren et al. (2021) studied how principals in a district engaged with deeper learning. The researchers categorized principals by their level of engagement in deeper learning. Boren et al. found that the principals who were highly engaged in deeper learning tended to focus on improving student-centered, personalized pedagogical practices with rich classroom, and community collaboration.

Vision—dimension 2: establishing a learner-focused culture that is asset-based, trusting, and celebratory

The second dimension of Domain 1 focuses on how school leaders establish and sustain a learning-focused culture that is asset-based, trusting, and celebratory. Five of the 15 articles for this domain addressed this dimension. Aas and Paulsen (2019) conducted a study in Norway and Sweden that focused on instructional leadership practices and the importance of trust in leadership as part of adult continuous learning in schools. Kelly et al. (2018) conducted a case study of a school in Finland to examine the ways leaders prioritized collaboration, wellbeing, and trust in the school vision. This approach connected administrators, students, and the community to deepen real-life experiences for students.

Similarly, Mayger and Hochbein (2021) studied how leaders leveraged trust to create student-centered visions in a comparative case study of three schools. The authors argued that the development of strong relationships, or *relational trust*, between the school and its stakeholders is essential to creating a supportive and inclusive learning environment for students. The authors concluded that school leaders are crucial in promoting connectedness and creating strong, supportive school communities. Building and maintaining strong relationships with key stakeholders can create a positive and inclusive learning environment for students and promote their academic and personal growth.

Burke et al. (2008) studied how school leaders leveraged curriculum, student experiences, and community partnerships to positively impact student learning. Additionally, Boren et al. (2021) found that principals who committed to deeper learning supported and worked closely with the leadership team to build a shared vision and capacity among teachers. As a result, the teachers became the primary drivers of deeper learning at school. The success of improving deeper learning and other desirable outcomes in schools correlates with educators' capacity to work together as genuine communities of professional learners. Ultimately, this requires recognizing and utilizing each member's individual contributions and capacities toward a shared vision of personalized learning.

Vision—dimension 3: establishing a learner-focused culture of risk-taking and continuous improvement

The third dimension of the first domain focuses on how leaders establish a learner-focused culture of risk-taking and continuous improvement. The competencies lay out how school leaders do this in various ways, including centering learning in their mission, cultivating a safe school environment where students feel they can ask for help and ask questions, and applying a growth mindset to problem-solving.

Scribner and Crow (2012) conducted a case study of how a principal's professional identity built trust and political capital with stakeholders. The authors found that the principal leverage collaboration and prioritize rigorous learning because of their professional and personal identities. These factors enabled the principal to navigate relationships with parents, students, and families more effectively. Scribner and Crow's findings echoed that of other researchers who noted the importance of the school leader building a learner-focused culture vision that is in service of continuous improvement (e.g., Boren et al., 2021; Ezzani, 2019; Kallio and Halverson, 2020).

Finally, Cheng and Mok (2007) examined how school leaders emphasized student-centered teaching in Hong Kong secondary schools. The researchers found that school-based management created an environment where students were encouraged to think in multiple ways and engage in multiple learning methods where personalized learning is fostered.

Vision—dimension 4: create norms that foster student voice, choice, and agency

The fourth dimension focuses on how school leaders create norms that foster student voice, choice, and agency through personalized learning. We located only one article that demonstrated this aspect. Kallio and Halverson (2020) found that when school leaders encouraged educators and students to collaborate in making significant school decisions (e.g., structures and routines), true student agency and authentic voice were fostered. The authors found that school leaders who implemented personalized learning in schools also committed to redesigning core organizational routines.

Vision—dimension 5: foster and maintain connections to local and global community

The fifth dimension focuses on how leaders foster and maintain connections to local and global communities to deepen student learning. One article was located for this dimension. Ezzani (2019) conducted a case study to examine instructional leadership and school culture. The instructional leadership team fostered community with families through a vision that prioritized student learning by hosting monthly meetings and finding ways to create partnerships as they educated students. The researcher found that when the community supported the vision, the school, its leaders, and its community collaborated to support personalized student learning.

Domain 2: personal skills, mindsets, and values

The second domain of the *Leadership Competencies for Learner-Centered, Personalized Education* is the Personal Skills, Mindsets, and Values domain. Competencies within Domain 2 “describe leaders who

model frequent and responsive monitoring of themselves and of the education environment in order to maintain a personalized, equitable, learner-centered school climate” (*Jobs for the Future and Council of Chief State School Officers, 2017*, p. 25). We located 12 articles that focused on various elements of the five dimensions within this domain.

Personal skills—dimension 1: relevant content and technical knowledge and skills

The first dimension is related to the school leaders’ knowledge base. This includes leaders mastering competency in curricular design, instructional leadership, revising approaches based on data trends, and using technology to personalize learning. We found studies that focused on creating inclusive cultures and preparing students to be accepting of diversity and becoming good global citizens (*Pollock and Briscoe, 2019*), the need for leaders to have an entrepreneurial mindset (*Ohia and Obasi, 2014*), as well as the need for leaders to focus on building faculty trust in creating personalized learning school climates (*Tschannen-Moran and Gareis, 2015*). Researchers also focused on how school leaders employed digital technologies to support personalized learning (*Law and Liang, 2019*).

Through a qualitative study in Ontario, Canada, that included 59 semi-structured interviews with school principals, *Pollock and Briscoe (2019)* explored how principals made sense of differences within their student populations and the influence of their sensemaking on their work. The researchers concluded that the onus is on principals to ensure students become competent global citizens who can adapt to the diverse contexts of the 21st century.

Iliško and Badyanova (2014) conducted a case study focused on sustainable leadership and governance in two schools in Latvia. Based on semi-structured interviews with the heads and deputy heads of those two schools, Iliško and Badyanova found that the leaders who emphasized on developing students’ intercultural skills, made students active participants in their learning, integrated locally relevant information, and made pupils aware of their responsibilities on a global scale.

Through a regression analysis of K–12 schools ($n = 64$), *Tschannen-Moran and Gareis (2015)* explored the relationships with faculty trust in the principal, principal leadership behaviors, school climate, and student achievement. The authors concluded that school leaders must build faculty trust as a precursor for personalized learning, which includes technology-assisted assessment, relevant instruction, and community engagement.

Law and Liang (2019) conducted an 11-year longitudinal study of a network of 10 special needs schools implementing e-learning. The authors found that by collaborating with others, the leaders of these special schools developed social structures that allowed them to implement the latest digital technologies to support a relevant, learner-centered context for all students.

Boren et al. (2021) studied how principals participated in a district-wide deeper learning initiative. The researchers focused on the vision, approach, and mindset, ranking the principals from disengaged to highly engaged in deeper learning, where personalized learning was at the core of this work. The authors found that “some of the principals at the most highly engaged schools described their vision for learning as a balanced approach to developing knowledge, skills, and dispositions” (p. 13).

Finally, *Ohia and Obasi (2014)* researched the perceptions of senior secondary school leaders regarding entrepreneurialism. The researchers concluded that practical teaching/learning exercises like role-play, simulations, and student-focused

assessment should be used to engage students in the teaching and learning process. This process requires a mindset shift for school leaders.

Personal skills—dimension 2: communicate a commitment to equity and learner-centered, personalized approaches

The second dimension is related to school leaders reflecting on issues related to class, race, and relative privilege while employing an equity lens in which each student’s strengths, diversity, experiences, learning differences, and culture are viewed as assets for personalized learning approaches. For this dimension, we located three articles that focused on equity, culturally responsive school culture, and student-centered leadership. *Ezzani (2019)* conducted a case study to understand a school culture that valued instructional leadership and served students in ways that created a culturally responsive and socially just environment. The researcher studied how the principal developed a cultural paradigm shift by involving teachers as partners in instructional leadership to enhance learning outcomes for underserved students. Likewise, *Riordan et al. (2019)* researched teacher professional development in two urban schools that focused on creating equitable spaces for students to enhance personalized learning. The researchers found that when school leaders developed teachers’ professional learning around equity, it was centered around critical pedagogy, and the leaders modeled instructional practices that promoted equity. The authors concluded that having an equity lens when developing teacher professional development created a culture of inquiry and ownership where deeper learning can thrive. Finally, *Burke et al. (2008)* studied how school leaders leveraged curriculum, student experiences, and community partnerships to positively impact student learning in a district. The researchers found that students of color often found their identity erased in the traditional school curriculum. The authors noted that only when this erasure is addressed can schools continuously improve to support their students of color.

Personal skills—dimension 3: effective change management on an ongoing basis

The third dimension of Domain 2 focuses on how leaders must develop their skills and language for change management around personalized learning. We located one study that focused on this topic. Using cross-sectional survey research in Hong Kong secondary schools, *Cheng and Mok (2007)* found that school-based management allowed leaders better to support student-centered teaching and students’ active learning. By adopting this decentralized paradigm (i.e., school-based management), school leaders become goal developers, human resources developers, coordinators, and resource developers, while teachers become partners and active developers of student-centered learning experiences.

Personal skills—dimension 4: modeling being a risk-taker and innovator

We found two articles related to the fourth dimension, which focuses on the principal being a risk-taker and an innovator. This dimension focuses on leaders using evidence and strategic priorities as a basis for decision-making, making use of techniques that help devise creative and

innovative solutions to challenges in improving learning, and continually reading and interpreting the learning environment to identify patterns, areas of improvement, and leverage points for new and innovative actions. Both articles focused on leaders and digital innovations. First, [Pautz and Sadera \(2017\)](#) researched the roles and responsibilities of eight elementary school principals who led one-to-one pilot initiatives in their district. The researchers found that the principals of this pilot saw themselves as change agents, risk-takers, and innovators. Similarly, [Banister and Reinhart \(2015\)](#) conducted a mixed methods case study in a Midwestern state to examine principals' experiences with adopting digital innovations (e.g., mobile technologies and online/blended learning). The researchers found the principals balanced having a commitment to standards and legislated assessments while espousing a strong allegiance to innovation and a commitment to personalized learning experiences for students.

Personal skills—dimension 5: life-long learner with a growth mindset

The fifth dimension focuses on how deeper learning leaders demonstrate the ability to strive toward ambitious, long-term educational and professional goals that advance leadership in a personalized setting. For this competency, leaders must reflect on and revise personal behaviors and seek to instill that mindset in others. We found two articles that fell in this dimension. The first study was conducted by [Boren et al. \(2021\)](#), who investigated a personalized, deeper learning, district-wide initiative. The authors found that leaders who were highly engaged in the initiative created learning environments that were “inclusive, positive, trusting, innovative, risk-taking, [and fostered a] growth mindset” (p. 10). Leaders who create such environments must themselves be risk-takers with a growth mindset.

[Riordan et al. \(2019\)](#) studied the role of school leaders in developing and providing equity-focused professional development for teachers. The authors concluded that leaders must have professional goals that advance personalization. The authors noted that,

It is essential that we envision and design schools and districts to support equity and deeper learning for all students, especially the most underserved. We believe teachers are at the fulcrum to impact change and our research explores the principles for designing professional learning that engages teachers as learners and helps to model the kinds of learning they want to design for their students. (p. 342)

The authors also concluded that schools “need to expand the voices” in creating equity-focused teacher professional development (p. 335). In doing so, leaders must “model instructional practices that promote equity” and create a culture of equity where deeper learning can thrive (p. 335).

Domain 3: capacity building for innovation and continuous improvement

The third domain focuses on the school leader's ability to build the capacity of school staff to create and sustain a culture of continuous improvement around personalized learning. Our research located 14 articles in this domain.

Capacity building—dimension 1: build and sustain an effective team

Dimension 1 is related to how school leaders create and maintain an effective team that values personalized, student-centered learning. School leaders who are skilled in this domain can support staff members who are dedicated to the vision of personalized learning and willing to collaborate, grow, and effectively overcome challenges.

Trust and collaboration are essential to creating an effective team ([Ezzani, 2019](#); [Kiltz et al., 2004](#); [Pautz and Sadera, 2017](#)). [Kiltz et al. \(2004\)](#) found that trust and collaboration were core aspects of the professional development of school leaders who participated in a mentorship program. Through a qualitative study, Kiltz et al. concluded that one way to build capacity for mentors to support school leaders was to build relationships continuously and to see themselves as learners first. Once they saw themselves as learners, they could support each other to support learner-centered learning in their districts. Similarly, using a case study approach, [Ezzani \(2019\)](#) found that when school leaders leveraged teachers and the community as partners, the school could more fully realize the vision of personalized learning for their students.

Trust and collaboration also build capacity when introducing school initiatives. Using a phenomenological study, [Pautz and Sadera \(2017\)](#) examined eight elementary school principals who led a one-to-one computing initiative in their schools. The researchers found that creating a culture of risk-taking and innovation increased trust between school leaders and staff. Through this culture of risk-taking, innovation, and trust, the school leaders could carry out their technological initiatives with the collaboration of their staff. In contrast, [Daniels et al. \(2013\)](#) examined the barriers that inhibited sustainable technology integration in a Canadian high school. One barrier noted was that leaders and teachers could not articulate the vision or see how their actions align with personalized learning. There is a need for collaboration among team members to remain focused on strengthening the vision collectively.

In a historical retrospective, [Colbert and Arboleda \(2016\)](#) documented the implementation of an education reform initiative in a single school in Colombia. This initiative focused on active learning, collaborative learning, and cognitive thinking skills. Innovation in the schools in Colombia was led mainly by building the capacity and knowledge of educators who worked collaboratively with students and families. As a result of this capacity and knowledge building, the engagement of family, students, and educators became normalized, which led to the success and sustainability in the implementation of more learner-centered education reform.

[Steinhoff et al. \(2022\)](#) studied 39 administrators who moved from traditional to competency-based education. The researchers found that the administrators perceived professional development for teachers as an essential resource needed to implement competency-based education. The authors suggested that superintendents should seek guidance from colleagues and organizations during the transition to competency-based education to build shared leadership.

Capacity building—dimension 2: develop instruction that improves learning

Dimension 2 focuses on how school leaders develop instructional approaches that improve learning. This competency includes working with staff to create and implement consistent routines in the learning community to improve instruction. School leaders also demonstrate this competency by nurturing learning communities and experiences

that develop personalized learning approaches, delivering clear and consistent feedback about instruction, and developing educators' ability to help students self-reflect and self-regulate to give students opportunities to use their voice and have choices.

One strategy to build the capacity of educators is to create a culture of professional learning through coaching conversations and professional learning communities where educators learn from each other (Ezzani, 2019; Kiltz et al., 2004; Park, 2018; Stern, 2016). Ezzani (2019) found that data-informed instruction was integral to professional development to support improved instructional practices. Ezzani (2019) noted that "data-informed decision-making was constructed by principals, teachers, and students" (p. 582). Similarly, Park (2018) conducted a case study to examine the impact of principal-led data conversations on differentiated instruction. Park found that through robust data analysis using various sources that were collected consistently, educators were more likely to reframe their narratives about students and their abilities positively. Instead of focusing on deficits in student knowledge and skills, educators began reframing to see students' strengths and areas of growth, making their pedagogy more student-centered.

Using a mentorship program model, Kiltz et al. (2004) found that school leaders developed their instruction to improve deeper learning by positioning themselves as learners. Through the program, the school leaders could document their professional growth through workshops and partnerships with their mentors. As a result, school leaders deepened their understanding of learner-centered instruction to, in turn, support their schools, teachers, and students.

Data analysis was also important when examining common core learning standards (Stern, 2016). In a qualitative study, Stern (2016) examined how educators at a middle school made sense of and responded to the Common Core Standards and No Child Left Behind. Stern found that educators in middle school relied more on the Common Core Standards (especially during professional development) to inform instruction. The principal and educators felt less inclined to support No Child Left Behind due to fears of testing pressure on students and how testing pressures can move students away from being genuinely interested in their learning.

Both Colbert and Arboleda (2016) and Allen et al. (2018) studied the ways school leaders supported shifts toward student-centered approaches while improving instruction. In a longitudinal study, Allen et al. concluded that educators in Indonesia benefited from a teacher development program that supported capacity building and improved instruction. Additionally, Colbert and Arboleda noted how an initiative in Colombia had a similar effect of increased capacity in educators and improved learner-centered instruction.

Abawi et al. (2018) conducted a phenomenological case study in Canada, Colombia, and Australia to examine the practices of inclusive school leaders. The researchers sought to connect the rhetoric and reality of the norms and assumptions of inclusive school culture. The principals in this study included professional learning as a key tenet to support inclusive school culture. The school leaders and educators in the study worked collectively to ensure that instruction supported the individualized needs of each student.

Capacity building—dimension 3: support a culture of risk-taking and continuous improvement for educators

The third dimension of Domain 3 focuses on how school leaders must develop and promote leadership among students and staff through cycles of inquiry, planning, experimentation, and innovation.

This dimension stresses that deeper learning leaders should adopt a strengths-based, continuous improvement approach that is personalized to the learning needs of all educators. We found five articles in this dimension.

Three of those studies focused on how educational leaders fostered a supportive learning environment by implementing structures and approaches that support innovation and risk-taking in educators. First, Abawi et al. (2018) explored the experiences of school leaders in Australia, Canada, and Colombia working to create inclusive learning environments by building an adaptable student-centered community. One key finding was that the leaders foster a culture where mistakes are welcomed. This study highlighted the importance of school leaders being willing to take risks and make difficult decisions to create inclusive learning environments. Second, Boren et al. (2021) found that deep learning leaders supported learning environments that were inclusive, positive, trusting, innovative, and risk-taking. Third, Sun and Gao (2019) examined the roles of school leaders and teachers in instructional reform supported by information and communications technology. The school established supporting pedagogical and organizational systems for teachers in an instructional reform, creating a continuous and collaborative learning culture.

Another aspect of this dimension is that leaders should promote leadership opportunities for teachers and students to support a learner-centered, personalized approach. As such, Riordan et al. (2019) found that the gap between the design and implementation of professional development programs narrowed when teachers had opportunities to take ownership and lead their own professional learning experiences. Similarly, Ezzani (2019) studied how principals fostered leadership capacity in teachers and developed them into instructional leaders. Through instructional leadership, the leaders experienced school transformation, moving from innovation stagnation to continuous improvement.

Capacity building—dimension 4: build educators' capacity for assessment for learning and strategic data use

Dimension 4 focuses on leaders encouraging a variety of assessment strategies that align with human learning and development, involving students in monitoring their progress, and establishing a culture of peer feedback among educators while engaging community partners in the learning process. We found five articles that aligned with this dimension.

Three studies focused on leaders building the capacity to use and monitor data to support students' learning. Firstly, Park (2018) studied the importance of using data-informed decision-making to promote equity and improve student learning. The researcher concluded that data-informed leadership is essential for promoting equity and learning in education and encourages education leaders to prioritize data conversations as part of their leadership practices. Second, Ezzani (2019) found that school leaders developed the capacity of teachers to lead instructional teams and facilitate professional learning communities, which were intended to promote equity goals. The school leaders also guided the teacher leaders in analyzing state assessment data, which was a new practice that had previously been done by consultants. Through this process, the instructional leadership team learned how to disaggregate data and identify challenges with reading comprehension across grade levels. The team then shared longitudinal data, which showed that student achievement had been stagnant, inspiring the teacher leaders to work

collaboratively with school leaders to lead faculty in data-informed decision-making during the first professional learning community work session. Finally, [Hargreaves \(2020\)](#) found that some principals felt that using data developed the capacity of teachers to take more responsibility and set specific goals for all their students, including those with learning disabilities. This capacity was achieved by requiring teachers to review results with their colleagues and incorporate the findings into their teaching practices. The emphasis on data increased the capacity of all teachers to work with special needs students, as it encouraged them to set specific, measurable, and attainable goals.

We located one study in which researchers focused on supporting educators in employing multiple assessment strategies consistent with their knowledge of learning and development. [Allen et al. \(2018\)](#) conducted a study on the effectiveness of offshore training programs in implementing pedagogical reform in the Indonesian education system. The researchers found that participants recognized the importance of formative assessment methods, stating that students' achievements should not be solely based on test results but also on other evaluation methods, such as asking for students' feedback and providing continuous assessments.

Other researchers focused on developing the capacity of educators to provide supportive feedback on each other's practice. For example, [Kiltz et al. \(2004\)](#) suggested that effective leadership should focus on each administrator's needs and goals and support their growth through personalized mentoring and coaching. The authors argued that this approach could help create a culture of continuous learning and improvement within schools, leading to better outcomes for administrators and students. The model emphasizes the importance of building strong relationships between mentors and mentees, as well as providing ongoing support and feedback to promote ongoing growth and development.

Capacity building—dimension 5: deliver strategic and personalized professional learning

Dimension 5 focuses on delivering strategic and personalized professional learning. School leaders who demonstrate competencies in this dimension co-design and implement personalized professional development for their staff in service of deeper learning. Additionally, school leaders who master this competency keep a learner-centered vision on top of their minds while modeling professional development and supporting staff to increase their capacity to support the students in their schools.

The research indicates that professional learning is essential for school leaders while supporting a personalized, learner-centered vision within schools ([Ezzani, 2019](#); [Riordan et al., 2019](#)). [Ezzani \(2019\)](#) conducted a case study of one school in California that offered professional learning on data-driven decision-making. Ezzani detailed how centralizing the efforts of professional learning communities on data created a culture of inquiry among teachers. The researcher noted the importance of leaders modeling instructional leadership skills for teachers.

Similarly, [Riordan et al. \(2019\)](#) found that equity was an essential key in professional development and contributed to the creation of a culture of inquiry. Riordan et al. noted that when school leaders and educators collaboratively designed and implemented professional development programs, educators felt more invested in their professional development.

Domain 4: shared responsibility and structures for continuous improvement, innovation, and assessment

The fourth domain focuses on distributing responsibilities across the organization and creating structures to support deeper learning innovations. It consists of competencies required for leaders to create and maintain a learner-centered system of renewal and improvement and the structures to make it feasible to assess outcomes at all levels of the education environment. We found 23 articles that had applications to this domain.

Continuous improvement—dimension 1: create structures to support and spread innovation

Dimension 1 focuses on how leaders should establish teams and support a sense of ownership, autonomy, and alignment for innovation. Leaders for deeper learning must encourage faculty-initiated improvement of programs and practices and have a shared approach to problem-solving. For this dimension, we located two articles. The first study was conducted by [Colbert and Arboleda \(2016\)](#), who researched the experiences of principals in developing structures for scaling up a student-centered participatory project. The leaders reframed the structures of the school (i.e., creating a community of practice) to empower teachers through teacher training, helping teachers gain more autonomy and encouraging higher-level thinking in students. Similarly, in a second study, [Rutledge et al. \(2017\)](#) examined the role of school leaders in creating structures to support personalized learning as well as the socioemotional wellbeing of students. The researchers noted how the leaders in this district encouraged faculty-initiated improvement by giving up "ownership over design and professional development" to school staff (p. 642). These actions demonstrate the leader's ability to encourage faculty-initiated improvement to support personalized learning in their school.

Continuous improvement—dimension 2: use assessment for and as learning

The second dimension notes how deeper learning leaders should ensure standards and assessments connect to real-world experiences and job expectations. This involves systematically analyzing data to design and modify personalized learning paths. This dimension also impresses upon the leader the need to develop structures where students build a body of evidence that demonstrates their growth (e.g., portfolios or capstones). We located 10 articles that addressed this dimension.

Researchers emphasized systematically using data to understand the skills of each student and then using that information to design and modify personalized learning paths for each student. For example, [Aas and Paulsen \(2019\)](#) studied the role of school principals in Scandinavia when using assessment for and as learning. By adopting an instructional leadership approach, the school leaders fostered a culture of continuous learning and growth for both students and teachers. Similarly, [Cheng and Mok \(2007\)](#) found that school-based management allowed leaders to support active learning better. The researchers found that school-based management is closely related to teachers' student-centered teaching in terms of facilitating student learning, thinking, self-reflection, and assessment. Finally, [Bingham \(2016\)](#) researched how a charter school struggled with implementing a blended learning instructional model and

concluded that leaders must vet online curricula to ensure that assessments measure intended outcomes.

Banister and Reinhart (2015) examined principals' experiences adopting digital innovations for personalized learning. They found that the principals balanced having a commitment to standards and legislated assessments while espousing a strong allegiance to innovation and commitment to personalized learning experiences for students. The authors focused on how leaders employed assessment and curriculum design approaches that reduced barriers and optimized both challenge and support to meet the needs of all learners.

The literature body provided some guidance around assessing student growth and learning progressions. For example, Hargreaves (2020) studied the impact of standardized tests in Ontario, Canada, and noted standardized testing resulted in increased stress, decreased motivation among students, and a narrow focus on test preparation over a well-rounded education. The author argued that the current system does not align with goals for deeper learning and young people's development. Likewise, Kaplan (2016) found that school leaders often constrain assessment by relying on standards-based assessments, which leads to teachers undervaluing other types of assessment that may be based on learning progression (e.g., performance-based assessment). In contrast, by comparing the results of continuous assessment and end-of-year mathematics examinations in Namibia, Samson and Marongwe (2013) found that integrating assessment with teaching improved student learning and helped shape and direct the teaching-learning process. The authors highlighted how assessments that were incorporated into the teaching and learning process provided deeper insights into the learning progression.

Three studies focused on the importance of portfolios in helping to assess student learning. Kelly et al. (2018) noted how leaders aimed to cultivate students' abilities to self-assess through more comprehensive assessments such as portfolios, reflections, and projects. Sherman and Crum (2007) investigated the role of elementary school principals in promoting student achievement in reading. The researchers found that principals acted as catalysts in this process by providing instructional leadership and creating a supportive environment for teachers and students. The principals in the study encouraged teachers to assess students to identify needs and use assessment methods that promoted the students' growth and learning progression, such as basal assessments, teacher-made assessments, running records, and portfolio assessments. Likewise, Nehring and Szczesiul (2015) found that students' learning was better assessed through portfolios, performances, and local assessment practices rather than just standardized exams.

Continuous improvement—dimension 3: establish collective accountability

Dimension 3 focuses on how leaders should work with their broader learning community to ensure college—and career-ready standards are anchored in deeper learning competencies. We located seven articles related to this dimension.

Researchers focused on accountability structures, systems, and measures that support risk-taking and continuous improvement. For example, Kulophas and Hallinger (2020) investigated the role of school leaders in Thailand in creating a culture of academic optimism that supported teacher learning. The authors found that school leaders who fostered a culture of academic optimism provided teachers with opportunities for professional growth and development, encouraged teachers to be innovative and take risks in their teaching practices, and

created a positive and supportive learning environment. Similarly, Nehring and Szczesiul (2015) studied a new educational approach in Northern Ireland that combined deeper learning and 21st-century skills with high-stakes accountability to promote a well-rounded and effective educational experience. To establish collective accountability, teachers assigned open-ended, high-risk tasks requiring students to rely on their creativity, creating a 21st-century learning environment characterized by a clear purpose, accountability, and support.

Other researchers focused on how leaders included stakeholders (i.e., students, teachers, boards, and the community) in determining shared accountability. For example, Bingham and Burch (2017) conducted a three-year case study of a personalized learning charter school. They concluded that allowing teachers to develop their own curriculum and assessments created a collective, democratic accountability system. Gibney et al. (2017) studied the relationship between teacher and student efficacy in one high-performing school in Texas. They found that administrators secured buy-in from teachers around a cohesive vision for effective structural reforms. By creating relational accountability, the efficacy of all stakeholders was strengthened in service of student achievement. Similarly, Sherman and Crum (2007) found that principals took accountability for setting a tone of responsibility for increased student learning.

Another indicator of personalized learning competencies is that leaders should seek to understand and combat accountability policies that inhibit a learner-centered, personalized environment. Hargreaves (2020) focused on the impact of standardized tests in Ontario, Canada, and concluded that the 20-year-old accountability through standardized testing is no longer effective and lacks coherence with desired student outcomes.

Another aspect of this dimension is the need for leaders to work with the learning community. For example, Kelly et al. (2018) explored the relationship between trust, collaboration, and wellbeing in Finland and the role of leaders in promoting these values. The researchers found trust, collaboration, and wellbeing paramount in the Finnish education system. The researchers noted how the system links schooling with real-world experiences while developing literacy skills. They noted,

Innovative, project-based learning that blurs the line between schools and communities is perhaps the epitome of this type of collaboration. During this process, students not only learn course material, they learn how to apply it and they develop skills that can translate easily to other projects and problems. (p. 38)

Continuous improvement—dimension 4: foster systems that support personalization

Dimension 4 focuses on school leaders creating flexible systems that enable learner-centered, personalized approaches (e.g., competency-based education, blended learning, expanded learning opportunities, work-based learning, internships). We found two articles that addressed this dimension. In the first article, Kallio and Halverson (2020) conducted a five-year qualitative study of 11 personalized learning programs to identify leadership tasks that support personalized learning in schools. The authors argued that understanding how educators and students engage in school redesign tasks (e.g., redesigning physical spaces and determining instructional time) can inform other schools implementing personalized learning. The researchers found that leaders supported personalized learning by redesigning physical spaces, creating unique technology ecosystems, and redesigning instructional time. To foster students' independence, Kallio and Halverson found that leaders

implemented practices such as student autonomy, interest-based projects, computer adaptive technologies, and using data to guide discussions with teachers.

The second article focused on administrators' experiences in shifting to competency-based education. [Steinhoff et al. \(2022\)](#) studied 39 administrators who shifted from traditional assessments to competency-based assessments. The authors found that administrators reported benefits such as personalization, meaningfulness, and independence. The authors noted that shared leadership was a needed prerequisite to competency-based assessments.

Continuous improvement—dimension 5: enhance continuous improvement and personalized approaches with technology

The fifth dimension focuses on the need for leaders to understand how technology can be used to support personalized learning. We found five articles that addressed aspects of this dimension. In the first article, [Bingham \(2016\)](#) examined a failed blended learning initiative and found that the initiative floundered because of a lack of clear communication structures and proper professional development. In contrast, the second article focused on the success of a technology initiative. [Banister and Reinhart \(2015\)](#) explored principals' experiences with personalizing education by integrating mobile technologies in the classroom. The researchers concluded that the one-to-one mobile device initiative “creates opportunities for teachers and students to individualize, customize and differentiate instruction for students” (p. 112).

In the third article, [Daniels et al. \(2013\)](#) studied the challenges that hinder the successful integration of technology in high school classrooms. The authors concluded that technology integration in high schools requires a coordinated and sustained effort from educators, administrators, policymakers, and technology providers to address these barriers and ensure that students can benefit from the full potential of technology in education. In the fourth article, [Ng et al. \(2020\)](#) discussed three case studies on blended learning in schools during the pandemic. The researchers observed that the schools applied a blended approach of asynchronous and synchronous learning to meet learners' needs, using technological affordances to engage students in self-paced materials, social interaction, and meaningful activities.

In the final article, [Kallio and Halverson \(2020\)](#) examined how leaders used technology for personalized learning. The researchers found that each personalized learning program used a technology-enhanced system to manage the assessment and instruction data. This allowed teachers and leaders to track projects, upload work samples, and aggregate data. The researchers detailed how the leaders used computer adaptive technologies to differentiate learning into programs designed around students' demonstrated needs. One of the leaders in the study noted, “it's really hard to personalize if you're not using technology” (p. 381).

Continuous improvement—dimension 6: use communication approaches that enable shared responsibility

The sixth dimension of Domain 4 is related to leaders providing ongoing leadership opportunities, seeking feedback, and listening to voices across the learning community (i.e., staff, students, and parents) to guide decision-making while ensuring educators, students, and parents understand how to use assessment data appropriately to improve students' learning. We found five articles in this dimension.

A common theme among these articles was the importance of collaboration and communication between school leaders and teachers in promoting successful educational reforms and improving student learning outcomes. For example, [Bingham \(2016\)](#) examined how a charter school struggled with implementing a blended learning model. The initiative failed because of a lack of clear communication structures and proper professional development. In contrast, [Sun and Gao \(2019\)](#) explored the roles of school leaders and teachers in implementing a flipped classroom approach in a school-wide setting in China. The researchers found that successfully implementing a flipped classroom required collaboration and communication between school leaders and teachers, a willingness to experiment and take risks, and the development of a shared vision and goals.

Three studies focused on listening to the community. First, [Ezzani \(2019\)](#) researched the experiences of a leader who created a professional learning community that included teachers, parents, and students. By creating shared responsibility among stakeholders and developing points of collaboration, the leaders empowered students to set goals for themselves, analyze their progress, and take ownership of their learning. Second, [Pautz and Sadera \(2017\)](#) explored principals' experiences leading changes associated with a one-to-one initiative. The researchers found that the principals in the study provided opportunities for growth as a school community and made collaborative professional growth a building-wide priority because they believed that everyone is responsible for student learning. Finally, [D'Annolfo and Schumann \(2012\)](#) sought to understand the impact of using a student engagement protocol on changing instructional practices. A key finding was that student engagement increased by using a protocol with a common vocabulary that allowed students to understand better what they needed to know. Using this engagement protocol, responsibility for learning was shared and made transparent between leaders, teachers, parents, and students.

Limitations

Conceptual and design restrictions limit the current study. Conceptually, the work was grounded in the *Leadership Competencies for Learner-Centered, Personalized Education* developed by Jobs of the Future (2017). Hence, the findings are about competencies school leaders need to hold and likely missed what leaders *do* to foster personalized learning in schools. The framework, at times, was too vague to capture the competencies required to transform existing systems fully.

The design of the study also restricted the findings. For example, the data collection date misses the rich work that has come out since 2023. The design also missed out on books that have been published on the topic, like [Richardson et al. \(2024\)](#), *Leadership for deeper learning: Facilitating school innovation and transformation* and [Mehta and Fine \(2020\)](#), *In search of deeper learning: The quest to remake the American school*. These books add to the body of literature but were not captured in the current study. The research design also only captured English-only work and thus missed the work done in non-English contexts (see [Sliwka, 2018](#)).

The focus on only empirical studies also forced the team to exclude gray literature, where this conversation is quite robust. For example, the *Learner-Centered Collaborative (2024)* hosts a blog and podcast on this topic. *5 powerful practices to develop learner-centered*

school leaders was a blog post focused on leadership competencies, graduate profiles, and professional development. Other work by Fullan et al. (2019), titled, *Going deeper* was also excluded because it was not research, but rather a commentary where they offer suggestions for system change that would help personalize learning. Our inclusion criteria also missed policy papers from places like the Learning Policy Institute (see Bradley and Hernández, 2019; Burns et al., 2019) and the Carnegie Foundation (see Minthrop et al., 2022), which has published a range of white papers on deeper learning, personalized learning, and relevance.

Conclusion

We found a few articles in Domain 2 related to leaders and self, primarily about personal skills, mindsets, and values. In contrast, most articles focused on Domain 4, which focused on leaders and systems, primarily around shared responsibility and structures for continuous improvement, innovation, and assessment. Most of the Domain 4 articles focused on using assessment for and as learning. This indicates that when it comes to leading for personalized learning, the field of educational leaders appears to be vastly focused on assessing learning and less focused on mindsets (Domain 1), vision and culture setting (Domain 2), and building the capacity of others (Domain 3). This dearth leaves ample room for future research studies. Scholars might use this current analysis to indicate the novelty of the topic and its significance to the field.

It is interesting to note that in the initial database searches, the research team had many hits because many of these terminologies have become buzzwords that have little meaning. Concomitantly, these terms are rarely used when referring to school leadership. As such, the field has yet to connect leadership practices with student experiences regarding personalized learning. Of promise, however, is that we did see a recent shift toward leading for deeper learning, with the most articles found after 2019.

Future research might also focus on a deeper theoretical conceptualization of leading for personalized learning. The adopted framework provided a useful structure to categorize existing studies but did not allow for a critical lens to be applied to the topic at hand. Future studies might focus on the sociopolitical and systemic barriers to personalized learning environments, such as Critical Systems Theory (Fullan, 2008), Social Capital Theory (Bourdieu, 1986), or Ecological Systems Theory (Bronfenbrenner, 1979).

The adopted framework did not account for cultural, socioeconomic, and political variability across diverse educational systems. Future researchers might investigate how context and personalized learning leadership competencies interact. Future studies might also focus on leadership approaches rooted in Distributed Leadership Theory (Spillane, 2005) or Transformative Leadership (Shields, 2010).

Final thoughts

This meta-synthesis on school leadership competencies that support personalized learning lays out the research that has been published on leading for personalized learning. What became more apparent as we analyzed these 42 articles is that researchers have failed to capture

precisely how leaders do this work. Without deep interrogations into the *how*, the field lacks insights into what works and in what context. As such, more research needs to be conducted to interrogate underlying mechanisms that enable or inhibit leaders from doing this work.

On that note, Richardson et al. (2024) visited 30 innovative schools engaged in deeper learning. By focusing on leadership practices, they developed a portrait of a deeper learning leader. This was an initial first step into understanding *how* leaders are building, sustaining, and redesigning schools that are personalized for more profound, more meaningful learning experiences. Core elements of that portrait include living the vision, authenticity, and agency in learning, trusting teachers as creative professionals, openness to new approaches and tools, over-communicating change, restlessness toward equity, and courage to live outside of the norm. These practices align well with the personalized learning competencies that guided our current work: vision, values, and culture for learning-centered personalized education; personal skills, mindsets, and values; capacity building for innovation and continuous improvement; and shared responsibility and structures for continuous improvement, innovation, and assessment. By juxtaposing competency with practice, school leaders are better informed about how to redesign schools to meet each child's personal needs.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

JR: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Writing – original draft, Writing – review & editing. SK: Data curation, Formal analysis, Writing – original draft, Writing – review & editing.

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The author(s) declare that no Gen AI was used in the creation of this manuscript.

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