

## Leading Deep Learning

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### Abstract

The purpose of this exploratory qualitative study was to better understand how the leadership of 11 principals impacted their schools' level of engagement in a district-wide deep learning initiative. Findings clustered in three primary areas of principal leadership: vision for learning, leadership approach, and mindset toward others. Principals leading highly engaged schools placed equal emphasis on students' acquisition of knowledge, skills, and dispositions; distributed school leadership widely; and spoke about their work with other-centric language. Principals at less engaged schools placed more importance on content knowledge acquisition, were either disengaged or top down in their leadership approaches and spoke with more egocentric language. This article provides implications for schools and districts interested in pursuing deep learning and leadership, along with recommendations for future research.

### Keywords

21st-Century learning, deep learning, distributed leadership, shared leadership, school leadership, principal leadership, skills, dispositions

## Introduction

Many schools, districts, and education systems that were originally designed to prepare students for economies based on industry and information are seeking to redefine student learning for complex societies that are increasingly focused on global and humanitarian issues (Collins, 2017). Many of these revised definitions of student learning have encouraged educators to help students acquire academic content knowledge through deep learning frameworks (Bloom, 1956; Hess et al., 2009; Webb, 2006). In addition to deep content-knowledge mastery, some schools and systems have reconceptualized deep learning to include essential skills and dispositions (Fullan et al., 2018; Levin, 2012; Marzano & Heflebower, 2012). Rather than approaching skills and dispositions as byproducts of a strong school academic emphasis, they see knowledge, skills, and dispositions to each be essential school outcomes with the potential to be synergistically developed in mutually beneficial ways (Kay & Greenhill, 2013).

Many school systems that go after such balanced deep learning for students face myriad cultural, structural, and institutional challenges and barriers in that pursuit. Interestingly, despite experiencing similar challenges, some schools are finding success in their pursuit of deep learning, while other demographically similar schools are not (Darling-Hammond & Oakes, 2019; Dintersmith, 2018; Fullan et al. 2018; Mehta & Fine, 2019; Payne, 2010). And while it is well established that principal leadership significantly influences student academic achievement (Rivkin et al., 2005; Seashore-Louis & Leithwood, 2010), research is still emerging on the principal's influence on deep learning and the nature of that influence. The purpose of this study was to specifically explore how principal vision for learning, leadership approach, and mindset differed

between schools that are highly engaged in deep learning differed from those that are less engaged.

## Methods

Peak School District (pseudonym) in the Intermountain West region of the United States was seeking to provide deep learning experiences for its more than 75,000 students. Consistent with more holistic definitions of deep learning as cited in the literature above, Peak School District defined deep learning as “the acquisition and application of core knowledge, skills, and dispositions for the wellbeing of all students ... deep learning is deliberately created through effective pedagogical practices, new learning partnerships, inclusive learning environments, and by leveraging digital resources to prepare students to thrive in career, college, and society.” Peak has invested heavily in professional development, coaching, and leadership mentoring to ensure that teachers and school leaders have the capacity to help students learn deeply.

## Study purpose

Over the few years that Peak has supported this reform, several schools have embraced and invested in this deep learning initiative, while others have been reluctant and less engaged. Through this exploratory investigation, we wanted to better understand the differences in vision, approach, and mindset of principals in these schools. This research specifically examined how principal leadership has differed between schools that were highly and less engaged in deep learning, despite being offered similar support from their school district. We asked the following research question: How do principal vision, leadership approach, and professional mindsets differ in schools that are highly engaged in deep learning reform compared to those that are less engaged?

## Research design

Qualitative methods have been effective for better understanding the context of deep learning leadership.

Because the relevant constructs are highly contextual, a methodology permitting inductive discovery seems most appropriate for this research (Guba & Lincoln, 1994; Strauss & Corbin, 1998). Hallinger and Heck (1996) suggest that when researchers “focus on specific issues through more flexible, qualitative methods ... [they uncover] the more

subtle processes that underlie expertise in leadership behavior” (p. 36).

Employing a purposive, positive-deviance sampling approach (Patton, 2015), we consulted with Peak School District’s leadership to identify schools that they perceived as highly engaged and less engaged in deep learning reform. Schools identified as highly engaged in deep learning were proactively pursuing all four elements included in Peak’s definition of deep learning (see Figure 1).

	Disengaged	Highly-Engaged
Pedagogical Practices	Narrow range, highly traditional, & teacher-centered	Wide range, highly student-centered, & active
Learning Partnerships	Collaboration limited to own classroom, team, & schools	Rich collaboration within & outside of own classroom, team, & school
Learning Environments	Hierarchical, low-energy, risk-averse, fixed-mindset	Inclusive, positive, trusting, innovative, risk-taking, growth mindset
Leveraging Digital Resources	Technology drives pedagogy & distracts from learning	Technology as a tool to support pedagogy & engaged deep learning

Figure 1. Engagement in deep learning.

Approaching the selection of schools with a positive deviance orientation and wanting to better understand what was working and why, rather than what wasn’t working (Cameron, 2012), we identified 11 schools that

were highly and less engaged in deep learning. Seven of the schools were highly engaged in deep learning, and four were less engaged. We did not include any schools that were totally disengaged in deep learning. This sample was

stratified by principal gender (3 female, 8 male), experience as a principal (4 with 1-4 years; 3 with 5-8 years; 4 with 9+ years), and school size (3 schools with 250-500 students; 6 schools with 500-1,000 students; 2 schools with 1,000+ students). All of the schools in this sample have 10-40% economically disadvantaged students and 10-30% English language learners.

We conducted a semi-structured interview with the principal of each school, grounded in the following broader, exploratory research questions: How do you define deep learning (vision)? How have you led deep learning in your school (approach)? How do you describe the work of deep learning reform (mindset)? The interviews were transcribed and coded for emerging themes. Initial coding was completed by a blind reviewer who had no experience with the selected schools and was not aware which schools were designated as highly or less engaged in deep learning (Strauss & Corbin, 1998). Throughout the coding process we anticipated and provided for new variables that would emerge in the process of answering the research questions. Based on coding of the interview data, we identified several emerging themes and patterns associated with the initial questions.

## Findings

Three findings emerged that may partially explain the relationship between a school's level of engagement in deep learning and principal leadership. First, the principal's own personal vision for learning and the relative priority and balance placed on student

acquisition of knowledge, skills, and dispositions. Second, the leadership approach principals took in sharing and pursuing that vision, particularly with their school-level leadership team. Third, the way principals talked about and viewed their own and others' contribution to the work of deep learning. Clear patterns emerged that partially explain how principal vision, approach, and mindset influence corresponding levels of school engagement in deep learning.

### Principal vision for deep learning

Principal vision for deep learning emerged as a major finding from the data, including ways principals define deep learning as well as their cited purposes for deep learning. Principal vision also includes the priority and balance given to knowledge, skills, and dispositions. Because Peak School District's vision for learning included knowledge, skills, and dispositions, all of the principals referred to these three categories in the interviews. However, the weight and priority attributed to each differed among schools. We found three distinctive patterns of priority, as represented in Figures 2-4.

Although Peak District's vision for student learning delineates knowledge, skills, and dispositions as equally weighted priorities, district and state accountability and structural supports do not yet fully reflect those priorities. Thus, it was not surprising that some of the interviewed principals of less-engaged schools defined deep learning as students acquiring deeper content knowledge mastery with very little reference to skills and dispositions (see Figure 2).

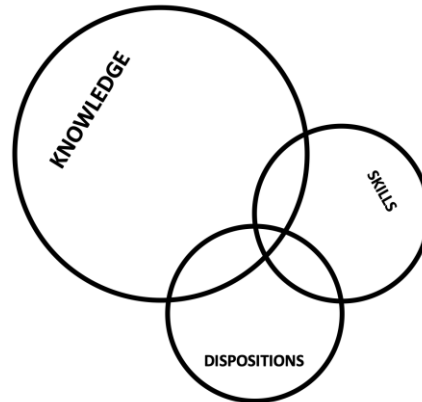


Figure 2. Knowledge-oriented vision for learning.

One representative comment reflecting this knowledge-focused mindset described deep learning as follows:

I am still struggling [with the vision for learning] from a philosophical standpoint because I feel like the surface learning has to happen first, and I don't know that we are making sure that the surface learning is happening as much as it needs to before we move on to deep learning.

Another principal acknowledged the importance of skills and dispositions while still placing priority attention on knowledge:

We can't let go of knowledge, and we are still chasing success, especially in reading. We still have those goals and that is our main goal. I feel like the district's vision

for learning has given us the freedom to feel less guilt about spending time on skills and dispositions.

Rather than seeing deep learning as a balanced pursuit of knowledge, skills, and dispositions, several principals believed that deep learning was primarily about improving the acquisition of content knowledge. While each principal acknowledged the importance of skills and dispositions, principals with a knowledge-oriented vision placed heavier emphasis and priority on knowledge while viewing skills and dispositions as desirable byproducts.

In contrast to a knowledge-oriented vision, several principals at more highly-engaged schools referred to a vision with greater emphasis on skills and dispositions. These principals suggested that skills and dispositions deserved greater emphasis and viewed content knowledge as the means to ensure students would acquire skills and dispositions (see Figure 3).

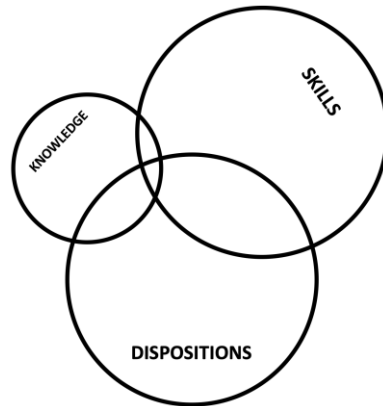


Figure 3. Skill and disposition-oriented vision for learning.

One principal noted:

“We try to emphasize dispositions by trying to come up with ways to help kids practice and learn skills. Who they are becoming becomes as important as what they are learning.”

Another principal claimed:

“If they don’t feel like they can do it, they’re not going to be able to do it—even if they have the skills and ability. How they feel about that is super, super important, and so I just have learned that no matter what we

do, that needs to be the number one focus.”

These principals acknowledged the importance of content knowledge but seemed to hold a vision heavier on skills and dispositions.

Finally, 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. For example, one principal stated that “deep learning is knowledge, skills, and dispositions” (see Figure 4).

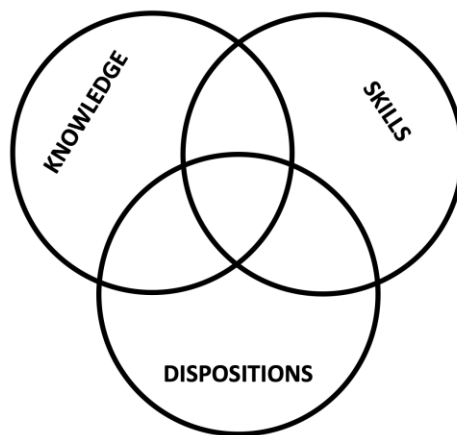


Figure 4. Balanced vision for learning.

Another suggested that deep learning provides a common language and framework and in fact gives permission for a balanced approach:

“The vision for learning suggests that skills and dispositions are a purposeful pursuit alongside knowledge learning aims. We need to make sure we’re integrating those and chasing them simultaneously.”

These principals acknowledged the balanced and mutually reinforcing nature of each of these aims, viewing each as critical to students’ ability to learn deeply.

Overall, principals of less-engaged schools held a knowledge-heavy vision for learning, while principals of the most highly engaged schools held a more balanced vision for learning. The relative balance a principal places on knowledge, skills, and dispositions seems to have an impact on their school’s level of engagement in deep learning.

### **Principal leadership approach**

A second finding of the study suggested that a principal’s leadership approach has important implications for deep learning reform throughout the school. Existing distributed leadership research guided the initial research design and subsequent analysis (Copland, 2003; Gronn, 2002; Spillane et al., 2001; Wang et al., 2014). Distributed leadership theory looks at interactions among members of an organization, including ways that the collective knowledge and skills of a group are spread across many people and throughout the organization. Principals who both formally and informally distribute leadership help teachers feel less isolated and classroom-bound, and

more connected and committed to the overall school organization (Baloglu, 2012; Hulpia et al., 2011). Considering this advantage of distributed leadership in schools, we explored the nuances of distributed school leadership for deep learning. We used DeFlamnis et al.’s (2016) levels of distributed leadership as a starting point to model the distribution of leadership at each of the selected schools, then adapted those models to more accurately reflect distributed leadership in practice in Peak School District.

### **Less supportive principal**

Some principals at less engaged schools were not as involved with their leadership teams in adopting deep learning (see Figure 5). Overall, these principals expressed mixed levels of enthusiasm for moving their schools toward deep learning, leaving most visioning and implementation of deep learning to teacher leaders.

One principal remarked:

“I just think I’m not sure where it’s at right now. I guess the path has been a little cloudy to me ... if anything I feel like my teachers have led out.”

Another principal explained how he invited his teachers to engage in the district’s deep learning training if they wanted, but then provided minimal support or follow-up for what was covered in those training sessions. He claimed that the “leadership team [members] are basically the ones that do all the work,” but without his active engagement and support, the work of the leadership team was not supporting deep learning throughout the school.

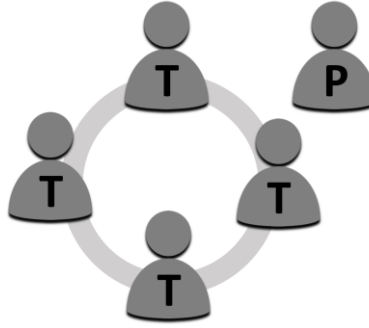


Figure 5. Principal less supportive.

### Top-down leadership

One of the principals at a less-engaged school described a top-down leadership approach with the school's leadership team (Figure 6). When asked who had been responsible for planning a specific part of the deep learning initiative, he responded, "I did. Well not just me. So it was me, my assistant principal, my school psychologist ... and then I presented it to the leadership team." With an abundance of confidence in his own vision and

expertise, this principal saw the leadership team as a helpful conduit of his vision and direction to the rest of the school, explaining that the teachers on the leadership team "have served as a great liaison between the classroom teachers and myself ... so they just serve as that communication tunnel." Both the disengaged and top-down principal leadership approach were more prevalent in schools that were less-engaged in deep learning.

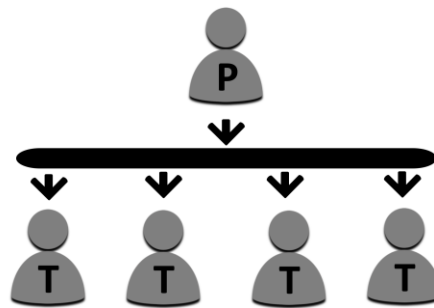


Figure 6. Top-down leadership.

### Principal-dependent collaboration

All principals at highly engaged schools relied extensively on distributing leadership in different forms. Leadership at a few of the schools depended heavily on the principal (Figure 7). While teachers on the leadership team collaborated frequently with other teachers, the deep learning collaborations

depended primarily on the principal's vision for deep learning. One principal asserted:

"My role has been to establish the vision, but I can't maintain that by myself really, so maybe I initially establish the vision, but then it's helping that to grow. Being the



lead visionary is fine as long as you don't stay by yourself—it just doesn't work. Maybe establishing a vision to begin with and then helping that to grow and become a culture.”

This principal acknowledged that his vision was a primary driver in moving his school toward deep learning, but desired to eventually transfer ownership to his leadership team.

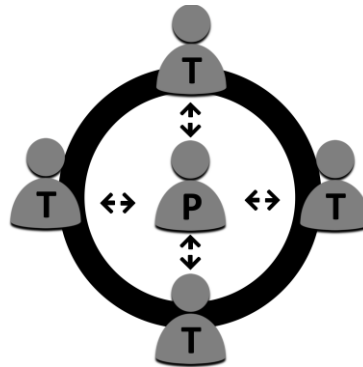


Figure 7. Principal-dependent collaboration.

### Principal as equal collaborator

Several principals at highly engaged schools distributed leadership to the point of being considered an equal collaborator on a leadership team that created a shared vision of their deep learning work (see Figure 8). While consistently maintaining the power of the position, these principals felt that those on their leadership team shared the same vision for deep learning, which became the guiding force in making better learning decisions.

One specified:

“We did a lot of work in building our ‘why’ and our purpose ... our

mission statement is providing 21st Century education for kids to become global citizens engaged in the world ... everything that we do comes back to our purpose.”

Another principal praised the leadership team:

“Without them, I would be nothing. They bring in perspectives that I don't have. They're able to share things that come right from classrooms. Teachers feel validated, they feel like they're on a team and things are working.”

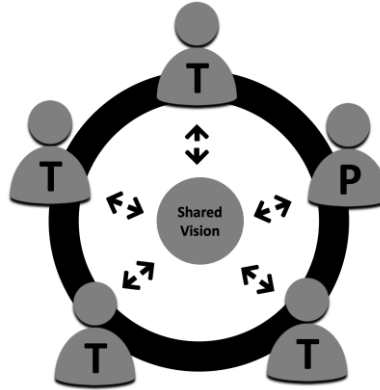


Figure 8. Principal as equal collaborator.

### Principal-supported collaboration

One principal at a highly engaged school described the leadership team as owning the vision so thoroughly that with principal support the teachers' shared vision and expertise were the primary drivers of deep learning at the school (Figure 9).

The principal engaged fully with the team, worked to build shared vision and capacity so that teachers had the capability to

be the primary drivers of deep learning at the school. This principal explained:

“So we got together as a leadership team, where I was really honest and open with them about my weaknesses, and my leadership team is awesome and my teachers are great ... and [I was able to tell] them ‘This needs to be your vision’.”

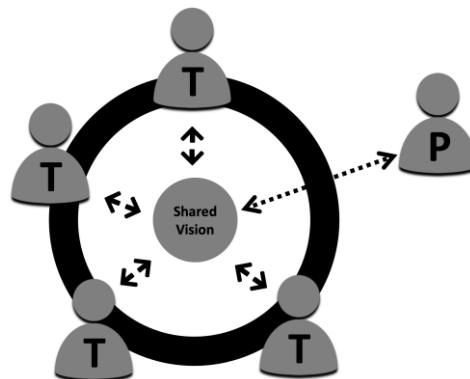


Figure 9. Principal-supported collaboration.

While principal leadership cannot be neatly categorized into a single model or approach, these findings seem to suggest that principals of schools more highly-engaged engaged in deep learning rely on the purposeful distribution of leadership more than principals at less-engaged schools.

### Principal mindset

In addition to the concrete and noticeable findings respecting a principal's vision for learning and leadership distribution, we had a sense that something more fundamental should be considered with these principals.

While the difference was initially difficult to specify, it seemed to attach to ways principals talked about leading deep learning reform. We referenced Pennebaker's (2011) research in conducting a word analysis from the interview transcriptions identifying personal pronouns used when illustrating the thoughts, feelings, motivations, and connections in the principal narratives.

We looked for how principals used I-words (first-person singular) such as *I*, *me*, and *my* as compared to we-words (first-person plural) such as *we*, *our*, and *us* in their descriptions of leading deep learning. The pronouns reflected both principals' leadership approach and their ways of representing their school's involvement, ownership, and engagement in a shared vision of deep learning.

Overall, the principals at highly engaged schools seemed much more other-centric in their focus toward leading deep learning, expressing more reliance on and deference toward their colleagues. When examining the ratios of we-word usage and I-word usage, it became clear that principals of highly engaged schools had a much higher ratio of we-word usage. The average we:I usage ratio for principals of highly-engaged schools

was 1.96:1, while the ratio for principals at less-engaged schools was 0.93:1.

We acknowledge that analyzing words alone is a limited way of seeing into principals' *we-I* orientations. For instance, this method does not consider irony, sarcasm, context, and body language. However, as Pennebaker (2011) commented:

[By] listening to, counting, and analyzing stealth words, we can learn about people in ways that even they may not appreciate or comprehend. At the same time, the ways people use stealth words can subtly affect how we perceive them and their messages. (p. 38).

While it could be tempting to conclude that principals at the less engaged schools have narcissistic tendencies toward acclaim and control, this does not seem to be the case (Rosenthal & Pittinsky, 2006). Interestingly, principals with a lower we:I ratio also tended to largely have a knowledge-oriented vision for learning and a less distributed approach to leadership. Conversely, principals with a higher we:I ratio tended to have a more balanced vision for learning and more distributed approach to leadership, suggesting that principal mindset is related to both principal vision for learning and approach to leadership.

### Discussion

As in previous research considering the influential role of principal leadership in levels of student academic achievement (Rivkin et al., 2005; Seashore-Louis & Leithwood, 2010), these findings suggest that principals' vision, leadership approach, and mindset notably impact their school's subsequent engagement in deep learning. Hambrick and Mason's (1984) upper echelons theory asserts that an

organization's vision, actions, and mindsets often closely reflect those of the formal leader.

Similarly, Ellwood Cubberly, a pioneer in the field of educational leadership, remarked over a century ago, "As is the principal, so is the school" (1919, p. 351).

Principal leadership is critical not only in supporting student academic achievement, but also in increasing schoolwide deep learning engagement.

Our findings suggest that principal vision for learning, leadership approach, and mindset are each important facets of principal leadership that seem to have a subsequent

trickle-down influence on whether a school fully embraces deep learning.

While this data set does not identify a precise correlation of the principal's vision for learning, leadership approach, and interpersonal mindset, these aspects do not seem to operate in isolation from each other in their influence on a school's deep learning.

Pertinent relationships seem to occur when principals are placed on a matrix differentiating vision, leadership approach, and mindset (see Figure 10). Principals 1-7 were leading highly engaged schools while principals 8-11 were leading less-engaged schools.

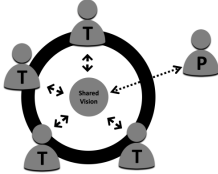
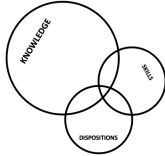
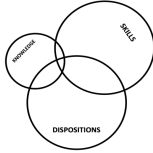
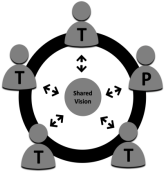
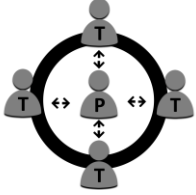
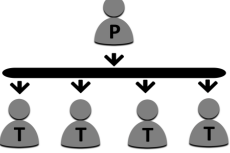
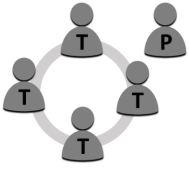
	Knowledge Orientation	Skills & Disposition Orientation	Balanced Orientation
			<b>Principal 6</b> Highly Engaged We:I 2.3:1
		<b>Principal 1</b> Highly Engaged We:I Ratio, 2.5:1	<b>Principal 2</b> Highly Engaged We:I Ratio, 2.0:1 <b>Principal 4</b> Highly Engaged We:I Ratio, 2.6:1 <b>Principal 5</b> Highly Engaged We:I Ratio, 2.2:1
		<b>Principal 3</b> Highly Engaged We:I Ratio, 1.3:1 <b>Principal 7</b> Highly Engaged We:I Ratio, 0.8:1	
	<b>Principal 8</b> Less Engaged We:I Ratio 1.0:1		
	<b>Principal 10</b> Less Engaged We:I Ratio 1.1:1 <b>Principal 9</b> Less Engaged We:I Ratio 0.7:1		<b>Principal 11</b> Less Engaged We:I Ratio 0.9:1

Figure 10. Principal deep learning vision, leadership structures, & mindset.

As this data set is cross-sectional, we affirm the possibility that over time, as principals' vision, leadership approach, and mindset evolve, the engagement of their schools in deep learning may evolve as well.

It is important to acknowledge that effective school leadership for deep learning likely requires diverse leadership configurations, rather than a single approach or mindset in all situations (Gronn, 2009). We agree with DuFour and Eaker (1998) that "principals do not empower others by disempowering themselves ... they must lead ... empowered teachers and strong principals are not mutually exclusive" (pp. 187–188).

While there are certainly times when principal leadership needs to be more principal- and less team-centric, it seems overall incompatible for principals to ask teachers to more fully engage students' minds, hands, and hearts through deep, more distributed classroom learning while using traditional top-down, principal-centric leadership approaches with their teachers (Elmore, 2004).

It would seem that for those interested in leading deep learning, "the fundamental role of leader is shifting. It is moving away from a model where the leader knows, directs, and tells and toward one where the leader sees, provokes, asks, and unleashes the capability of others" (Wiseman et al., 2013, p. 167).

These findings invite district leadership to reflect on their vision for learning, leadership approach, and mindsets. As Fullan and Kirtman (2019) explain: "Students cannot be empowered by unempowered teachers, and principals cannot empower teachers without being empowered themselves" (p. 69). What is a district's vision, approach, and mindset? District leaders should carefully consider

whether their measures of success, celebrations, and resource allocation empower a balanced vision for learning or a more traditional knowledge-heavy vision for learning. Do district leaders approach their work with principals and teachers by appropriately empowering them as equal collaborators, building shared vision and ownership for deep learning and other priorities, or do they rely on more traditional leader-centric and top-down approaches?

Similar to leaders of highly engaged schools, do district leaders embrace a we-we mindset in their leadership with principals and teachers or the we-they mindset so often used by principals of less-engaged schools? In addition to indirectly empowering principal deep learning leadership by creating the conditions and modeling, districts should more directly build principal's vision and capacity to lead a highly engaged deep learning school through ongoing, targeted, job-embedded professional development that is supported by consistent principal coaching.

More broadly, the findings of this study speak to our larger purposes as educational leaders to motivate and share responsibility for deep learning with *all* members of our educational communities.

Educators' capacity to work together as genuine communities of professional learners (rather than as token members of so-called PLCs) correlates with their success at improving deep learning and other desirable school outcomes. This success comes from *all parties* contributing to a vision for learning, working together as teams, and seeing themselves as integral to those teams' success, not just cogs in the detached institutional machine built to serve the principal's or district's vision (Buber, 1970).

It means seeing at a deep level the individual contributions and capacities of each member of a school community and working together in ways that ensure that team members' efforts are closely aligned to a shared purpose, for surely "Leadership brilliance is expressed more in 'we together' cooperation than in an 'I alone' delusion, particularly as organizations grow and become more diversified" (Schein & Schein, 2019, p. 114).

The most influential leadership challenge in this endeavor is to see and acknowledge individual contributions and then to hone those efforts toward mutually shared outcomes (Kellerman, 2008).

### **Future Research and Conclusion**

The cross sectional and exploratory nature of this data set prevented us from adequately understanding the possible developmental nature of leading deep learning and the possible relationships of principal vision, approach, and mindset as a balanced model of leading deep learning.

Some of the principals who had been involved longer with the district's deep learning initiative seemed to have a more balanced vision for learning, a more distributed leadership approach, and a more inclusive mindset. More specifically, focused longitudinal investigations would likely result in an integrated model that further clarifies developmental progressions and construct correlations that might be involved as principals extend their deep learning leadership.

In addition, future research could address impacts of deep learning on student, teacher, and principal wellbeing. We conducted a simple, qualitative wellbeing analysis using Seligman's PERMA framework and found evidence suggesting that according

to principal perception, individuals in the highly engaged schools in this study experienced higher levels of positive emotion, engagement, relationships, meaning, and accomplishment (Seligman & Adler, 2018). Adults as well as students seemed to experience higher overall wellbeing, suggesting a positive relationship between improved deep learning and increased wellbeing (Murphy & Seashore-Louis, 2018; Seligman & Adler, 2018).

Principals of less engaged schools did not seem to perceive a similarly high level of wellbeing within their schools. More robust research is needed to better understand the possible relationship between principal vision, leadership approach, mindset, and wellbeing.

Another area ripe for future research is the impact of the principal's vision, approach, and mindset on teacher leaders, individual teachers, and their students. In what ways do principal vision, approach, and mindset influence team leader vision, approach, and mindset in their work with teachers on their collaborative teams? How does principal vision, leadership, and mindset influence subsequent teacher vision, classroom leadership, and mindset in their work with students?

If a principal holds a balanced vision for learning, pursues distributed leadership approach, and is other-centric, do her team leaders tend also follow these same leadership patterns? Considering Hambrick and Mason's (1984) upper echelons theory and a potential trickle-down influence, we recommend more research of this type.

Ultimately this research suggests that perhaps school and district leadership need to reflect the type of learning that we as leaders hope is happening in classrooms. When schools were preparing students for assembly

lines in factories, the top-down, command and control-focused teaching and leadership consistent with theories of scientific management were perhaps useful (Taylor, 1911; Wheatley, 1997). But the findings of this study and results of other current research suggest that “deep learning changes the nature of leadership” (Fullan & Kirtman, 2019, p.

106). The purpose and goals of this study have been to examine and share a few of those needed changes and to call for future research to extend and expand understanding of effective leadership for deep learning. We are optimistic that teachers, principals, districts, and communities can thrive as they lead the work of deep learning.

### **Author Biographies**

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