High-Trust Leadership and Blended Learning in the Age of Disruptive Innovation:
Strategic Thinking for Colleges and Schools of Education

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Abstract

We introduce diverse definitions of leadership and its evolutionary history and then we integrate this idea network: strategic thinking, high-trust leadership, blended learning, and disruptive innovation. Following the lead of Marx's (2014) model of Teaching Leadership and Strategy and Rehm's (2014) model of High School Student Leadership Development, we identify how the Holland and Piper (2014) Technology Integration Education (TIE) model serves as a complementary guide for assessing the leadership performance of preservice teachers, who will be educating future K-12 leaders. We identify 20 research questions that education colleges and schools can use as evidence-based management in their undergraduate courses and their doctoral programs in education leadership. We conclude by recommending the special leadership role that colleges and schools of education play in sustaining democracy.

Introduction

Leadership is one of the most highly researched and widely written topics by both academics and practitioners (Miner, 2002, 2005). In the past 25 years, thousands of articles and books have been written on leadership, including the field of leadership and education reform (Owens, 2004; Owens & Valesky, 2011; Peck & Reitzug, 2012). Each year, hundreds of articles and books are written originally such as Rezvani (2010) or revised subsequently such as Kouzes and Posner (2012) and Bolman and Deal (2013).

Northouse (2013) defined leadership as "a process whereby an individual influences a group of individuals to achieve a common goal" (p. 5). In Hughes, Ginnett, and Curphy's (2012) popular textbook, they reviewed eight definitions of leadership by researchers and reached this consensus: "All considered, we find that defining leadership as 'the process of influencing an organized group toward accomplishing its goals' is fairly comprehensive and helpful" (p. 4). Marx (2014) summarized the evolution of leadership research where Trait Theories (1930s), Behavioral Theories (1940s and 1950s), Contingency Theories (1960s and 1970s), Substitute-

for-Leadership Theories (1970s), Transformational Theories (1970s and 1980s), and Strategic Theories (1980s and 1990s) dominated their respective decade(s). To this evolution, we would add the emergence of High-Trust Leadership.

Horn and Staker (2015) advanced this bold diffusion statement: "You can't go more than a few steps these days without hearing about blending learning. It's at the top of the list of trending topics related to changing education" (p. 31). Evidence of Horn and Staker's prediction can be found in the plethora of books such as Arney (2015) and conferences such as the International Association for K-12 Online Learning (iNACOL) 2015 and 2016 blended learning symposia. To understand the ubiquity of blended learning, we introduce disruptive innovation and its originator Clayton Christensen in comparative context.

Harvard University's motto is *Veritas* (truth). Its truth-motto represents the discovery and diffusion of ideas, including the ideas from these three thought leaders. Harvard economist Joseph Schumpeter (1942) gave us *creative destruction*, which refers to the rise and fall of firms in capitalism. Harvard business professor Michael Porter (1985) gave us *competitive advantage*, which refers to firms generating new processes and products to satisfy consumers better than their competitors. And Harvard business professor Clayton Christensen (1997) gave us *disruptive innovation*, which refers to firms discovering less-demanding consumers who value products that are relatively convenient, simple, and inexpensive.

About Schumpeter's influence, McCraw (2008) wrote that "The book you are about to read is one of the seminal nonfiction works of the last hundred years" (p. ix). About Porter's influence, Marx (2014) wrote that "Michael Porter (1980) has arguably exerted more influence over strategic planning than any other student of strategy over the past fifty years" (p. 79).

Since 1997, Clayton Christensen has become one of the country's most influential business professors. Christensen has expanded his ideas beyond the world of for-profit organizations to the product and service areas of non-profit organizations such as health care (2008) and education (2010). Because of this success, he has a think-do tank named in his honor, the Christensen Institute. Consequently, given Christensen's increasing influence, our primary title includes *in the Age of Disruptive Innovation*.

"We stand at the vanguard of a shift in education," proclaimed Christensen (2015, p. xv). Indeed, Christensen's statement is both thought-provoking and action-provoking! When faced with such a thought-provoking and action-provoking observation, many organizations, including and especially colleges and schools of education, will begin thinking strategically about high-trust leadership and blended learning.

We organize our paper with this narrative. We begin by summarizing this network of ideas: strategic thinking, high-trust leadership, blended learning, and disruptive innovation. Next, following the lead of Marx's (2014) model of "Teaching Leadership and Strategy" and Rehm's (2014) model of "High School Student Leadership Development," we identify how the Holland and Piper (2014) Technology Integration Education (TIE) model serves as a complementary guide for assessing the leadership performance of preservice teachers. These future teachers will not only be leaders themselves, but they will also be educating future leaders

at the K-12 levels. Then we identify 20 research questions for high-trust leadership and blended learning that education colleges and schools can use as evidence-based management in their undergraduate courses and their doctoral programs in education leadership. We conclude by recommending the special leadership role that colleges and schools of education play in sustaining democracy by promoting high-trust leadership and blended learning in the age of disruptive innovation.

Strategic Thinking for Colleges and Schools of Education

Strategic Thinking. Although Christensen's (2015) statement about "the vanguard of a shift in education" refers to K-12 organizations, his statement is equally applicable to higher education organizations, which inform and form a diverse and tightly coupled network among K-12 organizations. Arizona State University president Crow and historian Dabars (2015) observed that "The public research university is a highly successful model, but this does not diminish the imperative for new and differentiated models that more squarely address the needs of the nation in the twenty-first century" (p. 297). Moreover, as part of their strategic planning processes, colleges and schools of education continue to differentiate their brand portfolios, including their Ed.D. and Ph.D. programs in leadership. Thus, we believe that our ideas will serve as a preliminary pathway for education colleges and schools in their strategic thinking, doing, and performing processes.

Marx (2014) noted that "Strategy is as old as human conflict" (p. 75). Sloan (2006) recalled that the word *strategy* originates from the Greek word *strategos*. According to Sloan, "The Greeks regarded strategic wisdom as oscillating between different positions and perspectives toward a particular purpose" (p. 4).

The academic discipline of strategic management includes 10 schools (Mintzberg, Ahlstrand, & Lampel, 1998). Porter's (1980, 1985, 1990) ideas have had immense influence on diverse organizations around the globe. In the relatively nascent academic field of strategic management, Porter's contributions have been categorized as significant to the Positioning School (Mintzberg, et al., 1998) and to strategic planning (Marx, 2014).

We turn to Sloan (2006) as our guide. In contrast to the Positioning School (which sees strategy formation as an *analytical* process and at times is equated with the term *strategic planning*), the Learning School (which sees strategy formation as an *emergent* process) would perhaps best categorize Sloan's "strategic thinking." As Sloan (2006) stated, "Truly innovative strategic thinking is not about playing out new patterns in existing frameworks, but, rather, about creating new frameworks and different patterns within these new frameworks" (p. 145). Consequently, we begin to advance the beginnings of a new framework by integrating high-trust leadership, blended learning, and disruptive innovation.

High-Trust Leadership

Trust. From diverse disciplines, social scientists such as Fukuyama (1995), Hardin (2002), Light (2011), and Liu and Hanauer (2011) have written about the importance of trust in society. They viewed trust as a form of social capital, which enhances exchange relationships

and facilitates communication across individual, group, organizational, and societal levels.

Brookings Institution researchers Goldsmith and Eggers (2004) raised this question: "How can network architects encourage trust-based relationships?" (p. 129). Carnevale (1995) stated that "Trust expedites learning" (p. 30). The concerns and consequences of trust are interdisciplinary. Consequently, to understand high-trust leadership, we summarize the views of four diverse authors who have both academic and practical insights and experiences across for-profit and non-profit organizations.

Carnevale's high-trust leadership. Carnevale (1995), director of programs in public administration at the University of Oklahoma, highlighted the theory of high-trust leadership:

> The high-performing organization insists on a different type of leadership. In a sentence: *The goal of all leadership in high-performing organizations is to reduce subordinate dependency and build self-leadership among individual workers and teams* [italics original]. This theory of high-trust leadership means unlearning some of the basic assumptions about how to lead that have been embedded in traditional bureaucratic organizations. (p. 55)

For Carnevale, transactional leadership and transformational leadership are the two fundamental forms of leadership and they may enhance trust. Transactional leadership involves fulfilling expectations of self-interested, utility-maximizing individuals via reward recognition and deal-making. When these expectations of followers are met by leaders, then meeting or exceeding these expectations may create an ethos of trust. According to Carnevale, "Transactional leadership does create a measure of trust by honoring the bargain or contract between an individual and the organization. It also shows faith in people's ability to do good work" (p. 59).

Transformational leadership may include formulating and implementing dramatic changes in organizations with the potential to create a learning organization. During this change process, transformational leaders may create an ethos of trust if followers are empowered and given ownership and participation rights. According to Carnevale, when compared to transactional leadership, transformational leadership "holds more promise for creating trust *if* the leader is motivated by socialized power concerns" (p. 59).

Carnevale identified eight high-trust methods that leaders can adopt and adapt to create trust: (a) increase feeling of self-efficacy, (b) create shared vision, (c) concentrate on tasks and relationships, (d) use power to discourage dependency, (e) create a healthy learning environment, (f) be consistent, (g) work on culture, and (h) integrate practices. Because self-efficacy is one of the most prevalent constructs studied by education researchers (Holland & Piper, 2014), we emphasize this Carnevale observation: "The key activity of high-trust leadership is developing greater self-leadership capacities and feelings of self-efficacy among followers" (p. 71). About the importance of trust, Carnevale concluded that "Trust is the bedrock of organizations because the trusting relationship has special power in dealing with the everyday problems that arise in all work situations" (p. 195).

Covey's high-trust leadership. Covey (2006), the former CEO of Covey Leadership Center who cofounded CoveyLink—a boutique trust consulting agency—inaugurated the story of trust with this statement: "…if developed and leveraged, that one thing has the potential to create unparalleled success and prosperity in every dimension of life. Yet, it is the least understood, most neglected, and most underestimated possibility of our time. That one thing is trust." (p. 1)

To tell the story of trust, Covey adopted a ripple effect metaphor. Once the initial stone is dropped into water, it generates circular waves that increase in size. The five waves with their corresponding principles are (a) self-trust (credibility), (b) relationship trust (consistent behavior), (c) organizational trust (alignment), (d) market trust (reputation), and (e) societal trust (contribution or giving back).

To prioritize our summary, we focus on the second wave and third wave. For the second wave to occur with consistent behavior, Covey identified 13 behaviors. Most important among these behaviors is the 13th behavior of "extended trust," which is about transitioning from a trusted person to a trusted leader. Covey provided this perspective: "It [extended trust] creates reciprocity; when you trust people, other people tend to trust you in return. Additionally (and ironically), extending trust is one of the best ways to create trust when it's not there" (p. 223).

To explain the third wave of organizational trust, Covey identified seven low-trust organizational taxes (that are hidden) and seven high-trust organizational dividends, as shown in Table 1.

Table 1. Low-Trust Organizational Taxes and High-Trust Organizational Dividends

Low-Trust Organizational Taxes	High-Trust Organizational Dividends
Redundancy	Increased Value
Bureaucracy	Accelerated Growth
Politics	Enhanced Innovation
Disengagement	Improved Collaboration
Turnover	Stronger Partnering
Churn	Better Execution
Fraud	Heightened Loyalty

With the possible exception of "accelerated growth," the six high-trust organizational dividends certainly apply to non-profit organizations as do the seven low-trust organizational taxes. About organizational trust, Covey concluded that "it's vital to realize that designing or aligning it [the organization] in a way that establishes trust may well be your greatest influence" (p. 260).

Lyman's high-trust leadership. Lyman (2012), the cofounder of Great Place to Work Institute—a global trust consulting agency—inaugurated the story of trust with this statement: "We use the word *trust* to explain a bond that is created between and among people. Trust is an

emotional and cerebral connection, characterized by an ability to rely on someone to act in ways that will be of benefit to one's own health and well-being" (p. 4).

To tell the story of trust, Lyman adopted a virtuous circle metaphor. The trustworthy leader's virtuous circle includes these six elements and their corresponding principles: (a) sense of honor (humility, reciprocity, recognizing and feeling comfortable with one's role); (b) inclusion (believing in value of others, actively seeking others' ideas, sharing benefits); (c) valuing followers (choosing in leader-follower relationship, inviting followers to accompany leaders, connecting); (d) sharing information (promoting understanding, enhancing participation, extending influence); (e) developing others (creating full lives, pursuing multiple accomplishments, providing a path to follow); and (f) moving through uncertainty to pursue opportunities (addressing risk, uncovering and developing knowledge, applying wisdom).

About trustworthy leaders, Lyman identified these two values: (a) simplicity (not simplistic) and (b) imperfection (not perfection). For simplicity, trustworthy leaders "treat everyone from the same baseline of honor and inclusion" (p. 194). For seeing and accepting their imperfections, trustworthy leaders always inspire and aspire "to the high standards they set for themselves. They know that a lack of perfection is not an excuse for doing the wrong thing; rather, it reinforces their belief that doing the right thing is an ongoing process" (p. 194).

Hurley's high-trust leadership. Hurley (2012)—a faculty member in the High Impact Leadership program at Columbia University Business School—inaugurated the story of trust with this statement: "When we lose trust, we lose cooperation. Without trust, organizations and societies begin to break down. The loss of trust is much more dangerous than the loss of loyalty because it is an essential element to all effective relationships" (p. 2).

To tell the story of trust, Hurley adopted a teeter-totter metaphor to represent his Decision to Trust Model (DTM). In the center are two categories of trust variables: (a) trustor variables and (b) situational variables. Risk tolerance, adjustment, and relative power are the three trustor variables that "assess the general disposition of the decision maker to choose to trust or distrust" (p. 27). Situational security, similarities of status, interests, benevolent concern, capability, integrity, and communication are the seven situational variables that "define the antecedents to trust as they relate to the situation and the relationship with the trustee" (p. 27). To tip the teeter totter away from the distrust-choice side and toward the trust-choice side requires high scores on the three trustor variables, which we would describe as necessary conditions. Moreover, to tip the teeter tooter toward the trust-choice side also requires positive scores on the seven situational variables, which we would describe as sufficient conditions. In short, a combination of the ten trust variables is required to create a necessary and sufficient "permanent" tilt toward the trusting-choice side of the teeter totter.

To prioritize our summary, we focus on the seventh situational variable, communication. Table 2 shows two solution sets for enhancing trust via communication, as recommended by Hurley. Despite overlap between the two solution sets, these sets apply to non-profit organizations that would like to implement high-trust leadership.

Table 2. Solution Sets for Enhancing Trust via Communication

First Solution Set	Second Solution Set
Increase the frequency and candor of your communications.	Overcommunicate.
Occasionally engage in non-task or work-related relationship-building activities.	Use multiple media channels.
Be sure the same message cascades down throughout the organization.	Put senior management in the room with people.
Hold others accountable for communication.	Hold leaders accountable for helping people understand the "why" behind company values and decisions.
Emphasize listening, consultation, and support in communication.	Encourage "ask anything" sessions.
Promote direct communication and discourage gossip.	Do not shoot messengers.

Besides solution sets for each of the three trustor variables and seven situational variables, Hurley provided this prescription:

> The most powerful place to start is to improve trustworthiness in leaders. Over the long term, an organization or institution cannot be more trustworthy than its leaders…. From a trust perspective, the label *integrative stewardship* best captures what is required to restore trust in organizations and institutions. A good steward is someone who takes care of something of value and preserves it for the next generation. Stewards are good trustees. They are literally "trust worthy." (pp. 191-192)

To summarize, we see from our brief review of Carnevale, Covey, Lyman, and Hurley the diverse concerns and consequences for would-be high-trust leaders in for-profit and non-profit organizations. To conclude this section, we turn to a thought-leader and a thought-doer on leadership. Stephen R. Covey (1989), the founder of the Covey Leadership Center, offered this observation on trust:

> Trust is the highest form of human motivation. It brings out the very best in people. But it takes time and patience, and it doesn't preclude the necessity to train and develop people so that their competency can rise to the level of trust. (p. 178)

Blended Learning. Horn and Staker (2015) defined blended learning in these terms: Blended learning is a formal education program in which a student learns at least in part through online learning with some element of student control over time, place, path

and/or pace *and* at least in part at a supervised brick-and-mortar location away from home. (p. 55)

To understand blended learning, Horn and Staker (2015) framed the foundations of student-centered learning with this language and logic:

Personalized and competency-based learning, implemented jointly, form the basis of a student-centered learning system…. The challenge though is how to implement student-centered learning at scale….

This is why blended learning is so important. Blended learning is the engine that can power personalized and competency-based learning. Just as technology enables mass customization in so many sectors to meet diverse needs of so many people, online learning can allow students to learn any time, in any place, on any path, and at any pace at scale. (p. 10)

Because blended learning is coupled with disruptive innovation, we summarize the origins of disruptive innovation and sustaining innovation in the next section. For now, we may view sustaining innovation as something "new" that extends the life of the status quo learning model (whether at the course level, school level, or higher level) and view disruptive innovation as something "new" that dramatically alters the status quo learning model (whether at the course level, school level, or higher level). Horn and Staker (2015) illustrated disruptive innovation with this example:

Similar to other disruptions, online learning began in simple applications to serve students in circumstances where there was no alternative for learning. We call these circumstances 'nonconsumption' because they are occasions when the alternative to the disruptive technology is nothing at all…. Initially, even a plain vanilla online course was superior to those students' alternative—nothing. (pp. 3-4)

To categorize blended learning programs, Horn and Staker (2015) developed a taxonomy, which they described as imperfect and evolving. Generally, a taxonomy covers a topic fully (collectively exhaustive) and the primary categories and their respective sub-categories do not overlap (mutually exclusive) (Chrisman, Hofer, & Boulton, 1988). Horn and Staker's (2015) taxonomy includes four primary categories: (a) rotation model, (b) flex model, (c) a la carte model, and (d) enriched virtual model. The rotation model includes four sub-categories: (a) station rotation, (b) lab rotation, (c) flipped classroom, and (d) individual rotation.

Table 3 shows what we call the Blended Learning Matching Matrix, which summarizes Horn and Staker's (2015) complex contingency options. Sustaining classroom models include station rotation (SR), lab rotation (LR), and flipped-classroom (FC), which are the first-three sub-categories of the rotation model (RM). Disruptive classroom models include individual rotation (IR), which is the fourth sub-category of the rotation model (RM), flex model, (FM), a la carte model (ALCM), and enriched virtual model (EVM).

Because disruptive innovation is occurring primarily at the classroom level and not the school level, we conclude with these two key observations. First, Horn and Staker (2015) raised this question and then supplied the answer:

What, then, is the future role of schools? Rather than being destined to deteriorate or disappear, brick-and-mortar schools have an opportunity to shift some of their focus in response to the disruption. We suspect that schools will no longer have to be the primary source for content and instruction but instead can focus their capabilities on other core services. (pp. 80-81)

Table 3. Blended Learning Matching Matrix (continued on next page)

Issue	Three Sustaining Innovation Models			Four Disruptive Innovation Models			
	SR	LR	FC	IR	FM	ALCM	EVM
Problem							
Core Nonconsumption	Match	Match	Match	Match	Match	Match	Match
Team							
Functional	Match		Match				
Light-weight	Match	Match	Match				
Heavy-weight	Match	Match					
Autonomous				Match	Match	Match	Match
Students' Pace and Path Control							
During online portion of course	Match	Match	Match				
Throughout almost all of course				Match	Match		
Flexibility to skip in-person class at times						Match	Match
Teacher's Primary Role							
Face-to-face direct instruction	Match	Match					
Face-to-face indirect instruction			Match	Match	Match		Match
Online teacher of record						Match	

Note. Sustaining classroom models: station rotation (SR), lab rotation (LR), and flipped-classroom (FC), which are the first-three sub-categories of the rotation model (RM). Disruptive classroom models: individual rotation (IR), which is the fourth sub-category of the rotation model (RM), flex model, (FM), a la carte model (ALCM), and enriched virtual model (EVM).

Table 3. Blended Learning Matching Matrix

Issue	Three Sustaining Innovation Models			Four Disruptive Innovation Models			
	SR	LR	FC	IR	FM	ALCM	EVM
Physical Space							
Existing classrooms	Match		Match				
Existing classrooms and computer lab		Match					
Large open learning space				Match	Match		Match
Safe, supervised space						Match	
Internet-enabled devices							
Enough for fraction of students	Match	Match					
Enough for fraction of students throughout class period				Match	Match		
Enough for all students in class and at home			Match			Match	Match

Note. Sustaining classroom models: station rotation (SR), lab rotation (LR), and flipped-classroom (FC), which are the first-three sub-categories of the rotation model (RM). Disruptive classroom models: individual rotation (IR), which is the fourth sub-category of the rotation model (RM), flex model, (FM), a la carte model (ALCM), and enriched virtual model (EVM).

Second, about leadership and blended learning implementation, the director of innovation at Aspire Schools Arney (2015) emphasized that "Having the right leadership and support is imperative to a successful blended learning implementation…. I cannot state this enough: School leadership matters" (p. 47).

Disruptive Innovation. From Johannes Gutenberg's 1450 mechanical, moveable-type, printing press that made scribe's manual copying of texts relatively obsolete to today's digital

learning devices, technology-driven innovation permeates many civilizations across time (Mokyr, 1990). Technology may be the primary driver of innovation, but it is not the only driver of innovation. Changes in how organizations are structured can be driven by non-technological drivers such as reorganization of service or production processes, or alignment of incentives to fit better the intrinsic motivation and extrinsic motivation preferences of employees.

Innovation is occasionally used imprecisely as a substitute for words such as *invention* and *technology*. Invention has been categorized as new knowledge and innovation as the application of old knowledge (Mokyr, 1990). Innovation has been characterized as process innovation such as Henry Ford's car assembly line or as product innovation such as electricity replacing candles, kerosene, and whale oil (Utterback, 1996). Innovation has been categorized based on how quickly it diffuses (radical innovation) or how slowly it diffuses (incremental innovation) (Utterback, 1996). Innovation has been categorized simply as perception of newness by an individual (Rogers, 2003).

These diverse and multiple uses of innovation led to confusion among the readers of Christensen's books. Christensen (1997) framed disruption in terms of *technology*, not innovation. Christensen and Raynor (2003) reframed the disruption in terms of *innovation*, not technology. They explained that readers were incorrectly equating radical changes based on technology as disruptive technology and incremental changes based on technology as sustaining technology. Consequently, they made changes in language and "substituted the term disruptive innovation for the term disruptive technology—to minimize the chance that readers will twist the concept to fit into what we believe is an incorrect way of categorizing the circumstances" (p. 66). Thus, as Horn and Staker (2015) stated, "The term [disruptive innovation] refers to products and services that start in simple applications at the bottom of the market for those without the wealth or expertise to participate otherwise in the market" (p. 2).

To understand the trade-offs of blended learning in the context of disruptive innovation, we highlight the insights of strategic managers who frame decision analytics in the language of rational decision-makers assessing trade-offs among a pair of goods or services. For example, about the language of trade-offs as an "efficiency frontier," Christensen (2015) provided this provocative insight about strategic choice and blended learning:

> A decision to position one's company or products on a point on an efficiency frontier between trade-offs such as these [the comparative costs of lifting a multiple-mission, high-orbit satellite versus a single-mission, low orbiting satellite] is what my friends Michael Raynor and Michael Porter call 'strategy.' Strategy entails trade-offs.

> In education, a few of these trade-offs might be: Should the model of teaching be one-way (lecture) or two-way (discussion)? Should our model be based on personal tutors or teaching students by the batch? Should we build large schools to take advantage of economies of scale, or should we prefer smaller schools with fewer students per teacher? These are strategic choices along a theoretical efficiency frontier.

> After a strategic choice has been made, the types of innovations that educators focus on are what we call 'sustaining innovations' [as opposed to disruptive innovations]. These

types of innovations make good products better. They help you to more effectively deliver the strategic choices you have selected….

Disruptive innovation [as opposed to sustaining innovation] occurs when an entrepreneur or technologist figures out how to break a trade-off by giving more of one without requiring us to accept less of the other. Often, breaking a trade-off initiates the toppling of a paradigm.

A key reason why disruptive innovations are so adept at toppling paradigms—and industry leaders—is that sustaining innovations are static. They make the best of trade-offs that were decided in the past….

As the capability of online learning moves up the trajectory of improvement and obviates more and more trade-offs, blended learning preserves access to the best of in-person teaching and learning as we navigate disruption. Blended learning makes the best of the old and new paradigms available to all of us who want to learn. (pp. xvii-xx)

Thus, according to the disruptive innovation narrative, online learning began first as a product or service for less-demanding consumers in terms of convenience, simplicity, and relatively low prices. Horn and Staker (2015) explained the evolution of online learning with this logic:

But just as other successful disruptions march upmarket to attract more demanding customers, online learning has improved dramatically since its arrival. This pattern of disruptive innovation can be comforting because it offers assurance that low-end disruptive technologies improve over time…. The emergence of blended learning is one way learning is marching up market. (p. 4)

To summarize, although online learning began as a low-end disruptive innovation and subsequently it has improved in the form of today's blended learning, this new form of learning will continue to disrupt as it attracts more consumers and creates a mass market of increasingly demanding consumers.

Technology Integration Education (TIE) Model. Koehler and Mishra (2005) developed the technological, pedagogical, and content knowledge (TPACK) framework. This framework shows the intersection of the three concentric knowledge circles that produce seven domains of knowledge. Illustrations of the TPACK framework can be found at TPACK.org. Despite the explosion of articles and attempted applications of the TPACK framework, researchers became increasingly concerned about the value of the framework. For example, about the limits of the TPACK framework, Archambault and Barnett (2010) reached this conclusion: "In addition to weaknesses in TPACK's precision and heuristic value, the framework is also limited in its ability to assist researchers in predicting outcomes or revealing new knowledge" (p. 1660).

To overcome these limitations, Holland and Piper (2014) developed an interdisciplinary formal model that could be tested, falsified, and modified. Figure 1 shows their 12-construct

technology integration education (TIE) model of preservice teacher performance, which includes eight primary constructs and four moderator constructs. The TIE model illustrates the relationships among constructs with dashed lines because "in many areas of investigation, associational or correlational evidence is all that we have or will ever be likely to have" (Vogt, 2007, p. 36).
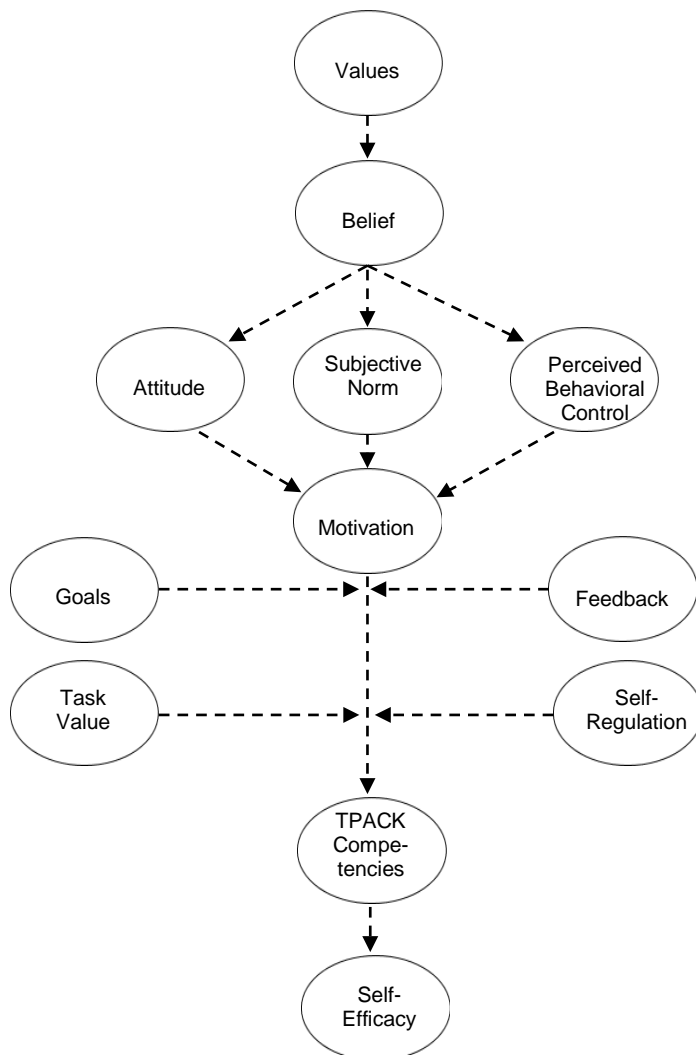

Figure 1. Technology Integration Education (TIE) Model for Preservice Teachers' Classroom Performance. Reprinted from "A Technology Integration Education (TIE) Model: Millennial Preservice Teachers' Motivations about Technological, Pedagogical, and Content Knowledge (TPACK) Competencies," by D. D. Holland and R. T. Piper, 2014, *Journal of Educational Computing Research*, *51*(3), p. 271. Copyright 2014 by Baywood Publishing Co., Inc.

Although Marx (2014) and Rehm (2014) never represented their ideas with formal, falsifiable models as recommended by Bacharach's (1989) criteria for what constitutes a model or theory, their ideas are complementary to the TIE Model. For example, Marx stated that "The separation of leadership and strategy manifests itself in the classroom where each concentrates

on its exclusive domain—there is no or minimal discussion of strategy in the leadership class, and no or minimal discussion in the strategy class" (p. 84). Thus, Marx is recommending that isolated domain silos become more than minimally integrated. For preservice teachers who will become leaders themselves and subsequently leaders of K-12 students, the TIE Model indicates that isolated learning domain silos should become more than minimally integrated, as represented by the 12 constructs. Toward this end, the content of the TPACK construct will need to be expanded to include leadership skills and strategy skills. As Kouzes and Posner (2012) revealed, "The truth is, leadership is an identifiable set of skills and abilities that are available to anyone" (p. 30).

Rehm's (2014) model for high school student leadership development included these three knowledge domains: (a) identity/personality, (b) self-efficacy, and (c) best practices of leadership. At the intersection of identity/personality and best practices of leadership is *leadership identity*. At the intersection of identity/personality and self-efficacy is *motivation to lead*. At the intersection of self-efficacy and best practices of leadership is *leadership self-efficacy*. The latter two intersections are relatively similar to the constructs of motivation and self-efficacy in the TIE model.

In sum, we think that the TIE model complements and extends the ideas of both Marx and Rehm. Also, because the TIE model has reliably measured variables, it serves as a source for generating empirical evidence beyond descriptive observational sources. Moreover, the TIE model provides practical insights for leadership education and training preservice teachers. For example, leadership educators may be misallocating resources if they only focus on the TPACK of leadership education. Leadership educators need to consider the interactive roles of motivation and goals, and the other variables of the TIE model, to allocate effectively education resources and improve leadership education.

Evidence-Based Management: Theory Building and Testing

Whether building theory via constructs and propositions or testing theory via variables and hypotheses (Bacharach, 1989), sources of evidence can be discovered via observations, surveys, or interviews. Rich, deep contextual evidence can be discovered from case studies (Eisenhardt, 1989; Yin, 2009).

Evidence-based management (EBM) and data-driven decision making (DDDM) are becoming more commonplace in the academic and practitioner literature for business administration (Erez & Grant, 2014; Locke, 2009; Rynes, Rousseau, & Barends, 2014) and education administration (Bernhardt, 2013; Mandinach & Jackson, 2012; Marsh & Farrell, 2015; Rehm, 2014). Latham (2009) indicted the science-free content of most management books:

> The bottom line is that most management books just have too much art and too little science…. This is the essence of an evidence-based manager: using proven techniques to inspire, develop, motivate, appraise, and coach a team to the highest performance possible. (p. ix, p. 154)

To which we would add, EBM and DDDM leadership professors will inspire and coach teams of students ranging from K-12 to education doctoral students.

About discovering evidence-based knowledge via provocative questioning, Dyer, Gregerson, and Christensen (2011) reached this conclusion: "Questions hold the potential to cultivate creative insights…. Questioning is a way of life for innovators, not a trendy intellectual insight. Our research found that not only do innovators ask more questions than non-innovators, they also ask more provocative ones" (pp. 68-69). Thus, these sources from evidence-based management and disruptive innovation guided our discovery as revealed in the forthcoming research questions.

To begin establishing an evidence-based theory and practice for high-trust leadership and blended learning, we reviewed other foundational sources from democratic education theory (Dewey, 1916; Fishkin, 2011; Gutmann, 1999), comparative political leadership (Landes, 1999; Nisbet, 1980; Tucker, 1987), higher education futures (Archibald & Feldman, 2011; Bradley, Seidman, & Painchaud, 2012; Carey, 2015; Crow & Dabars, 2015), organization behavior and theory (Adams, Heywood, & Rothstein, 2009; Fields, 2013; Ford, 1992; Galbraith, Downey, & Kates, 2002; Frase, 1992; Gerhart & Rynes, 2003; Gomez-Mejia, Berrone, & Franco-Santos, 2010; Mettler, 2014; Moore Johnson & Papay, 2009; Parmenter, 2015; Springer, 2009), public administration (Denhardt, 1993; Denhardt & Denhardt, 2007; Greene, 2005; Henig, 1994; Kettl, 2009; Perry & Hondeghem, 2008; Perry & Rainy, 1988; Rainey, 2014; Savas, 2000), and strategic management (Porter, 1985, 1990; Ralston & Wilson, 2006). From these diverse sources, we identified several research questions, which certainly are not exhaustively listed.

1. To what extent does leadership contingency theory (task-motivated) explain high-trust leadership?
2. To what extent does leadership contingency theory (relationship-motivated) explain high-trust leadership?
3. To what extent do high-trust leadership and blended-learning school organizations fit the Competitive Democracy Model of democratic education?
4. To what extent do high-trust leadership and blended-learning school organizations fit the Elite Deliberation Model of democratic education?
5. To what extent do high-trust leadership and blended-learning school organizations fit the Participatory Democracy Model of democratic education?
6. To what extent do high-trust leadership and blended-learning school organizations fit the Deliberative Democracy Model of democratic education?
7. To what extent do high-trust leadership and blended-learning school organizations fit the New Public Management Model of public administration?
8. To what extent do high-trust leadership and blended-learning school organizations fit the New Public Service Model of public administration?
9. To what extent do high-trust leadership and blended-learning school organizations fit the Public-Private Partnership Network Model of public administration?
10. To what extent do high-trust leadership and blended-learning school organizations fit the Positioning Model of business administration?
11. To what extent do high-trust leadership and blended-learning school organizations fit the Learning Model of business administration?

12. How do we measure performance of high-trust leadership and blended-learning school organizations?

13. Do high-trust leadership and blended school organizations outperform low-trust leadership and non-blended learning school organizations?

14. How do we measure fitting or matching (given how the *Blended* authors describe matching)?

15. How do we explain the performance differences among high-trust leadership and blended-learning school organizations in terms of organization-leadership fit?

16. How do we explain the performance differences among high-trust leadership and blended-learning school organizations in terms of organization-environment fit?

17. How do we explain the performance differences among high-trust leadership and blended-learning school organizations in terms of organization-job fit?

18. How do we explain the performance differences among high-trust leadership and blended-learning school organizations in terms of organization-person fit?

19. How do we explain the performance differences among high-trust leadership and blended-learning school organizations in terms of organization-compensation fit?

20. To what extent does a modified technology integration education (TIE) model predict leadership self-efficacy of preservice teachers?

These questions and others begin to advance a robust research agenda for high-trust leadership and blended learning. From these questions, discovering empirical evidence will further inform the theory and practice of leadership.

Recommendations

We offer these recommendations for advancing a robust research and practice agenda centered around high-trust leadership and blended learning. First, although typologies are not theories (Bacharach, 1989), typologies assist researchers by bringing precision to initial construct definition and subsequent relationship identification (Chrisman, et al., 1988). Researchers should incorporate high-trust leadership and blended learning in their revisions of standard typologies. Second, following Marx's (2014) observations about the minimal integration of strategy and leadership, we think that motivation, goals, TPACK, and self-efficacy are important domains that should be integrated more systematically with strategy and leadership, whether teaching at the university level or K-12 level. Third, following Rehm's (2014) observations about the practitioner's model for high school leadership development, we think that modification of the TPACK construct and self-efficacy construct in the technology integration education (TIE) model and subsequent collection of data will complement and reinforce the evidence-based ethos advocated by Rehm and other educators such as Latham (2009).

Fourth, we recommend that as part of their strategic thinking colleges and schools of education should enhance further their value-multiplied roles as educators of future leaders in sustaining democracy. Democracy literally means *people rule* (Crick, 2002). University of Pennsylvania president Gutmann (1999) framed the foundational relationship between democracy and education:

> The central question in the political theory of education—How should citizens be educated, and by whom?—has become even more prominent since the first edition of

> *Democratic Education* appeared ten years ago. The question has become more prominent in practice and in theory. (p. xi)

Former Harvard University president Bok (2006) recounted the relationship between democracy and education:

> From the first time of Thomas Jefferson to the present day, leaders in America have pointed to education as the key to a healthy democracy. And for good reason. Civic responsibility must be learned, for it is neither natural nor effortless…. Education is the obvious means to foster civic commitment and intellectual competence that citizens need to participate effectively in public life. That must be what John Dewey [1916] had in mind when he declared, "Democracy has to be born every generation, and education is its midwife." (p. 172)

Bok (2013) reinforced this theme when he emphasized that colleges and universities "**help to strengthen democracy by educating its future leaders** [bold added], preparing students to be active, knowledgeable citizens, and offering informed critiques of government programs and policies" (p. 1).

Leadership education is dear and deep for creating and sustaining democracy. Because high-trust leadership will most likely enhance the wide diffusion of blended learning, we would benefit from this increasingly educated citizenry. Moreover, as civic responsibility is learned better and quicker via blended learning, this increasingly educated citizenry would be best prepared to assess critically wide ranges of topics and ideas, including being better judges of their leaders and their leadership styles.

We agree with Gutmann's (1999) conclusion: "Higher education cannot succeed unless lower education does" (p. 172). By integrating high-trust leadership and blended learning outcomes, K-12 education and higher education will stand a better chance of being successful. Ultimately, from high-trust leadership and blended learning outcomes, democracy will stand the best chance of being sustained. Consequently, the strategic thinking of colleges and schools of education should actively integrate the theory and practice of high-trust leadership and blended learning in the age of disruptive innovation.

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