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AASA Journal of Scholarship and Practice
2018-2019

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Sponsorship and Appreciation

The AASA Journal of Scholarship and Practice would like to thank AASA, The School Superintendents Association, and in particular the AASA Leadership Development Office, for its ongoing sponsorship of the Journal.

We also offer special thanks to Kenneth Mitchell, Manhattanville College, for his efforts in selecting the articles that comprise this professional education journal and lending sound editorial comments to each volume.

The unique relationship between research and practice is appreciated, recognizing the mutual benefit to those educators who conduct the research and seek out evidence-based practice and those educators whose responsibility it is to carry out the mission of school districts in the education of children.

Without the support of AASA and Kenneth Mitchell, the AASA Journal of Scholarship and Practice would not be possible.
The Congressional Ban on Gun Violence Research

In June of 2009, when I was the superintendent of schools in a suburban district just north of Manhattan, I was held hostage by an armed gunman who threatened to execute me. A year later in the same district, a 13-year-old drew a gun on his teachers. In both instances the district went into lockdown, and fortunately, no one was injured. These were not my only dealings with guns on a school campus. As a building principal for fifteen years, I confiscated handguns, rifles, and ammunition. I have also attended the funerals of teenagers who took their own lives with guns, including the son of an employee.

I was principal of a large middle school during Columbine—the beginning of the nation’s awakening to campus gun violence. After Sandy Hook I naively believed that this tragedy would lead to change in how the nation’s leaders—members of Congress—would respond. While advocacy groups, such as Sandy Hook Promise or Everytown, began to coalesce to understand causes and find solutions, political leaders debated the extent to which sensible laws to prevent future tragedies should be legislated. Yet, any rational decision-making was impaired by a limited body of research.

A few days after the February 2018 tragedy at Marjory Stoneman Douglas High School in Parkland, Florida, the American Educational Research Association (AERA) published a statement calling for the lifting of a ban—the Dickey Amendment—that essentially prevents the Centers for Disease Control and Prevention (CDC) from conducting research on gun violence and warns: “None of the funds made available in this title may be used, in whole or in part, to advocate or promote gun control.”

In a March 2018 report, “Gun Policy in America,” the non-partisan Rand Corporation, also called for more research:

- To improve understanding of the real effects of gun policies, Congress should consider lifting current restrictions in appropriations legislation that limit research funding and access to data. In addition, the administration should invest in firearm research portfolios at the Centers for Disease Control and Prevention, the National Institutes of Health, and the National Institute of Justice at levels comparable to its current investment in other threats to public safety and health.
• To improve understanding of outcomes of critical concern to many in gun policy debates, the U.S. government and private research sponsors should support research examining the effects of gun laws on a wider set of outcomes, including crime, defensive gun use, hunting and sport shooting, officer-involved shootings, and the gun industry.

• To foster a more robust research program on gun policy, Congress should consider eliminating the restrictions it has imposed on the use of gun trace data for research purposes.

• Researchers, reviewers, academics, and science reporters should expect new analyses of the effects of gun policies to improve on earlier studies by persuasively addressing the methodological limitations of earlier studies, including problems with statistical power, model overfitting, covariate selection, and poorly calibrated standard errors, among others.

There are some in Congress who, indeed, want more information. Following the school shooting in Florida, House Speaker Paul Ryan said, “This is not the time to jump to some conclusions not knowing the full facts.” We agree. We need facts and lots of them. Those facts come from research.

One of AERA’s stated missions is to gather or support research that addresses school safety issues. The AASA Journal of Scholarship & Practice has similar goals. The Journal not only seeks to provide quality research to our superintendent-practitioners, but the Editorial Board has a responsibility to ensure publication of quality research that will help school leaders make informed decisions about school safety.

The events in Parkland, Florida, unfolded on the eve of AASA’s annual conference in Nashville. In his response to the event, Executive Director, Dan Domenech, presented a set of facts and a recollection of a previous statement: “According to the Washington Post we are averaging one school shooting per week this year. Since 2000, there have been 130 shootings resulting in 250 student and teacher deaths. Subsequent to the Sandy Hook shooting, the AASA Governing Board in July 2013 adopted a position paper on School Safety that says: If we hope to prevent future tragedies at schools, we must comprehensively address both school safety and gun safety. Increased mental health services, community supports for youth, and new attitudes about violence in our entertainment must all be part of this approach. We must be willing to spend the time and resources necessary to make sustainable changes.

It is our ethical responsibility as superintendents and scholar-practitioners to advocate for members of Congress to not only repeal the Dickey amendment but go beyond it by providing the funding of research and research-supported measures to maximize school safety.

Ken Mitchell, Editor
AASA Journal of Scholarship & Practice
References


Do Candidates’ Gender and Professional Experience Influence Superintendent Selection Decisions?

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Abstract

With superintendents being overwhelmingly White, male, career educators, investigations into what factors contribute to the homogeneous composition of the position are warranted. This study examined whether superintendent candidates’ and school board chairpersons’ gender and candidates’ professional background impact resume screening decisions. Chairpersons were selected randomly from across the United States to receive one of six types of hypothetical superintendent candidates’ resumes and respond to a survey requiring subjects to rate their likelihood of recommending the candidate for an interview. Variables examined were candidates’ gender, professional experience, and gender-similarity with the chairperson. An ordinal logistic regression was used to identify differences between groups. Results do not support the existence of gender-related bias by chairpersons but did find a preference for traditional candidates.

Key Words

superintendent selection, gender, professional experience
Introduction

Superintendents are often considered the most visible and influential figure within a school district. He or she wields great influence over the choice and implementation of district- and school-level initiatives, personnel selection decisions, achievement, and culture and climate.

Considering the substantial influence superintendents have on the success of their districts, selecting the best candidate to fill a superintendent vacancy is the most important and, yet, challenging function a school board must undertake (Hord & Estes, 1993).

Biases held by school board members against individuals based on demographic characteristics can hinder a school board’s ability to select the best candidate and can also lead to costly litigation. Title VII of the Civil Rights Act of 1964, for instance, explicitly prohibits the discrimination of individuals based on sex, race, color, national origin, and religion.

Nonetheless, American superintendents are most frequently White, male, and career educators (Kowalski, McCord, Petersen, Young, & Ellerson, 2011). This is especially problematic if these attributes are not related to superintendents’ performance but are the reason candidates are screened out of the superintendent selection process. To what extent these factors matter in the superintendent selection process are unknown and is the reason this study was conducted.

Background Literature

School districts, like most employers, often rely on certain selection techniques to predict the probability that a candidate will be successful in the position and for the organization. A standard approach to the selection process for any organization is utilizing initial and substantive assessment methods (Heneman, Judge, & Kammeyer-Mueller, 2014).

Initial assessments reduce the costs associated with selection by preemptively decreasing the number of candidates to be assessed by substantive assessment methods, which require more time and resources.

This phase in the selection process is frequently referred to as screening and include examples such as resumes and cover letters, application blanks, biographical information, reference reports, handwriting analysis, and literacy testing (Heneman et al., 2014). Substantive assessments are subsequently employed to make more informed judgments about remaining candidates and can include personality tests, ability tests, work samples, personal inventories, clinical assessments, and, most often, interviews (Heneman et al., 2014).

Being successful during both types of selection assessments is important for a candidate to secure a job offer; however, initial screening decisions are the focus of this study because a candidate cannot proceed further in the hiring process until this barrier is passed first.

Candidate gender

Within American public schools, females comprise 76% of all teachers, 52% of all principals, and yet only 24% of all superintendents, which is vastly disproportionate (Kowalski et al., 2011; National Center of Education Statistics, n.d.).

In response to the conspicuous disproportion of female superintendents, Glass, Björk, and Brunner (2000) asked: “What deters large numbers of women from becoming superintendents? Is the position not alluring to women? Are preparation program entryways
blocked? Are school board members not inclined to hire women? Are search firms not bringing women into their pools?” (p.45). Many have postulated plausible explanations for the dearth of female superintendents; some of the causes are self-selected by females and others are external.

**Self-selected**
Sperandio and Devdas (2015) state that the superintendency is not the aspiration of many women but, rather, they aspire towards occupying roles more closely linked to students.

Grogan and Shakeshaft (2013) claim that care for students is what most often motivated females to become educators and is what compels them to seek roles which can directly influence students. They further argue that achieving personal satisfaction, rather than career advancement, might also be the primary driving force behind many female educators’ career decisions.

To one day obtain a superintendency, one will likely need to relocate multiple times (Sperandio & Devdas, 2015), yet many women opt not to (Glass, 2000). Muñoz, Pankake, Ramalho, Mills, & Simonsson (2014) contend that women applying for superintendent positions give up too quickly.

Glass (2000) postulates that female educators: 1) are not in positions that normally lead to the superintendency; 2) are not gaining superintendent credentials in preparation programs; 3) are not as experienced nor as interested in districtwide fiscal management as their male counterparts; 4) are not interested in the superintendency for personal reasons; 5) enter the field of education for purposes other than pursuing leadership opportunities; and 6) enter administrative positions too late in their careers.

Whatever the reason, women pursuing the superintendency is not proportionate to the number of women who have or are pursuing superintendent certification (Grogan & Brunner, 2005).

**External**
The most commonly mentioned explanations for female underrepresentation are a lack of encouragement for women to pursue the superintendency and biases held by school board members (e.g., Brunner & Kim, 2010; Sperandio & Devdas, 2014; Tallerico, 2000). In a direct retort to Glass (2000), Brunner and Kim (2010, p. 279) pronounce Glass’ assertions as “myths and misunderstandings” and counter each, going so far as to state that they “can offer no explanation for the dearth of women in the superintendency other than the fact that long-held biases” are the root cause (p. 301).

Blaming the underrepresentation of female superintendents on school board members’ biases during the selection process is so prevalent that it is considered almost axiomatic and described as “fact” (Brunner & Kim, 2010). Yet, the claim is supported largely by correlational (i.e., the disproportionately low percentage of female superintendents) and anecdotal evidence from female educators (e.g., Tallerico, 2000) and without evidence based on the examination of selection biases of school board members, this “fact” cannot be substantiated.

With 44% of school board members nationally being female (National School Boards Association, 2015), would those pointing to external discriminatory factors claim that men are discriminating against women or that women are discriminating against other women too? Are there other possible factors at play? Brunner and Kim’s (2010) avowal may very well be accurate;
however, more evidence is necessary to uphold, or perhaps invalidate, the claim.

**Conceptualizing the superintendency**
The National Commission on Excellence in Education published *A Nation at Risk* in 1983 resulting in increased attention and criticism of American public schools. One result was a renewed interest in market-based school reforms, such as increased school choice options and school accountability standards and deregulation (Dudley-Marling & Baker, 2012). Neoliberalism, as it is often called (Harvey, 2007), has significantly affected public education.

One effect has been the implementation of voucher-based school choice programs in places such as Milwaukee, Cleveland, and Florida, and a more than 500% increase in attendance at alternative school choices nationally (U.S. Department of Education, 2015).

Arguably the most meaningful effect that neoliberalism has yielded on American schooling came through the passage of No Child Left Behind (NCLB) in 2001. NCLB enacted many market-based concepts such as high-stakes testing and accountability, deregulation, school choice initiatives, merit pay, and competition among schools (Dudley-Marling & Baker, 2012).

One of the results of the rise of neoliberalism has been a re-consideration of superintendent preparation and qualifications and a call by some (e.g., Eisinger & Hula, 2004; Hess, 2003, Quinn, 2007) for an infusion of non-educators, business and military leaders mostly, to improve educational outcomes. With nearly half of school board members nationally having business experience and relatively few having professional education experience (Hess, 2002), one might expect an openness to superintendent candidates with professional experience; yet only about 5% of superintendents nationally are nontraditional (Kowalski et al., 2011).

This study does not intend to argue for or against the employment of nontraditional superintendents, but merely to gain a better understanding of school board members’ views of such candidates.

**Theoretical Framework**
Superintendent selection decisions can be affected by school board members’ interest and their attraction to homologous attributes of the candidates, as such, this study utilized the similarity-attraction paradigm for its theoretical framing. Byrne’s (1971) similarity-attraction paradigm postulates individuals are attracted to others who are similar in held attitudes and beliefs which can influence selection decisions made by employers when such characteristics become known or perceived.

Attitudes, values, or beliefs are not usually recognizable for observers of paper credentials; however, demographic similarity between the employer and candidate on characteristics such as gender can lead to perceived similarity in attitudes and beliefs.

Such perceived similarity can lead to interpersonal attraction and bias in a selection decision (Graves & Powell, 1995). With 56% of school board members being male (National School Boards Association, 2015), if similarity-attraction effects are real in the screening decisions of superintendent candidates, then such effects might be contributing to the dearth of female superintendents.

**Purpose and Advancement**
The purpose of this study is to investigate whether superintendent candidate and school board chairpersons’ gender and candidates’
professional experience impact superintendent resume screening decisions. In so doing, the study yields empirical evidence as to whether or not biases exist and the extent to which bias contributes to the disproportionate percentages of female and nontraditional superintendents. This alone makes this study significant because there is very limited research examining the influences of gender and type of experience on the selection of superintendent candidates.

Furthermore, although research screening decisions has been extant for decades (e.g., Mayfield, 1964), and many studies have examined the public educational context (e.g., Reis, Young, & Jury, 1999; Young, 2005), rarely, if ever, have school board members been the subjects of such research. Therefore, by examining the school board members’ selection decision-making processes, the current study serves as a potentially seminal work for a new stream of future research examining school board members’ perceptions and bias directly.

This study seeks to address the following research questions:

1) *Does a superintendent candidate’s gender affect the chairperson’s decision to offer an interview to the candidate?*

2) *Does a superintendent candidate’s gender-similarity with the school board chairperson affect the chairperson’s decision to offer an interview to the candidate?*

3) *Does a superintendent candidate’s type of experience (educational vs. military vs. business) affect the chairperson’s decision to offer an interview?*

**Method**

The study’s population is all school board chairpersons of United States’ public school districts. To determine the necessary number of participants, a statistical power analysis was conducted using procedures as set forth by Cohen (1977) with an alpha level of 0.05, a beta of at least 0.20, a medium effect size, and a sample size of 139 or more was suggested via simulation using G*Power for logistic regression.

In addition to an overall study sample size, Peduzzi, Conconcato, Kemper, Holford, and Feinstein (1996) recommend at least ten responses per treatment group in a logistic regression analysis. Since similar research within social science has yielded approximately a 35.7% response rate (Baruch & Holtom, 2008), 480 subjects were selected randomly by Market Data Retrieval to be sampled with an anticipated receipt of 168 responses.

The sample was derived using a balanced stratified random sampling process based on gender, with male (n = 240) and female (n = 240) participants being randomly assigned in equal proportions to one of the six experimental conditions.

The survey instrument was delivered using a mixed-mode process which included a blind copied email, a second blind copied email, an individualized email, and a USPS-delivered packet, each in two-week intervals, with respondents to a delivery step being excluded from any subsequent survey deliveries. Included in each survey delivery was an explanatory cover letter, a superintendent candidate resume, and an electronic survey instrument. The cover letter
detailed the purpose of the study, solicited participation from the recipient, provided directions for participation, and assured confidentiality regarding their responses and participation.

The USPS-delivered packets also included a stamped, pre-addressed return envelope. This mixed-mode delivery process allowed for an increased response rate compared to a single U.S. mailed-only solicitation of participation (Kaplowitz, Hadlock, & Levine, 2004; Miller & Dillman, 2011).

With 177 responses, the response rate (37%) exceeded the 35% suggested by Baruch and Holtom (2008) for organization-level research. Both delivery methods utilized in the delivery process yielded relatively proportional response rates: 101 subjects responded via email (21%) and 76 responded by mail (20% of the remaining 379 solicited by mail).

Responses were evenly distributed amongst all of the treatment groups as suggested by Peduzzi et al. (1996), with males and females responding in comparable numbers to each. A check that the random assignment resulted in comparable treatment and control groups was conducted by analyzing the variance in demographic traits of respondents (e.g., school district size and number of superintendent selection committees participated in). No statistical difference was found, suggesting that the random assignment was effective.

Experimental manipulations
The independent variables in the study are gender of school board chairperson, gender of superintendent candidate, and type of professional experience of superintendent candidate. The hypothetical superintendent candidates’ resumes varied only in the gender and type of professional experience of the candidates, with subjects randomly assigned one of six potential candidate gender/experience combinations: male with educational background, male with business background, male with military background, female with educational background, female with business background, and female with military background.

Business and military backgrounds were utilized since these types of leaders are oft proposed as alternatives to traditional superintendent candidates (e.g., AASA, 2016; Hess, 2003; Quinn, 2007).

To reduce the opportunity of confounding, all other information, such as level of educational attainment (EdD, JD, DBA), institution of educational attainment, total years of professional experience, years of experience at each step/level in career, current location, type of undergraduate degree (i.e., business management), candidates’ surname, and look and format of resume, were all constant by design.

Demographic information, such as that of age and ethnicity were indistinguishable in the resumes by holding constant all years and lengths of service at each level of the profession in each resume as well as using the same surname for each candidate.

Content validity
Unlike other similar studies (e.g., Young, 2005), gender was operationalized in the resumes using gender-specific first names, “Patricia” or “Tom,” rather than gender-specific title pre-fixes such as “Mr.” and “Ms.”

This was done to prevent confounding due to assumptions made by respondents about the marital status and/or age of hypothetical candidates. Patricia and Tom have been
empirically shown to be analogous in terms of attractiveness and connotations of age, competence, and race (Kasof, 1993; Mehrabian, 1988, 1990).

The operationalization of all independent variables was evaluated to determine content validity using a series of expert panels. A panel of actively-serving local school board members identified the names Patricia and Tom as being female- and male-associated, respectively, and the surname “Williams” as being non-associated with any specific ethnicity.

All of the above-mentioned forenames and surnames were validated using Lawshe’s (1975) Content Validity Ratio (CVR) at .99. A CVR score can range from 0 to 1, with 1 indicating complete consensus amongst the panelists. Lawshe (1975) suggests a minimum of at least five panelists with a minimum CVR of .99 in order to establish content validity; however, more panelists are suggested for lesser values of agreement. CVR can be calculated \( \frac{n_e - N/2}{N/2} \), where \( n_e \) is the number of panelists indicating a certain response and \( N \) is the total number of panelists.

In addition, professional background was manipulated between educational experience (teacher, high school assistant principal, high school principal, and assistant superintendent of curriculum and instruction) and military and business experiences determined equivalent by two panels of experts.

ROTC instructors and business teachers were selected as the panels of experts for professional background experiences because these individuals have the unique experiences of having worked both in education and in the military or business field, respectively, making them uniquely qualified to compare the education occupation to that of their former industry. The military and business experience panels provided military (Ensign, Lieutenant, Lieutenant Commander, and Commander) and business (sales representative, assistant sales manager, manager, and vice president of sales) positions equivalent to those included in the traditional resume with a high level of validity (CVR .99).

**Dependent measures**
The dependent variable—the likelihood school board chairpersons would extend an interview offer to a superintendent candidate—was rated using a 10-point Likert-type item with higher ratings indicative of greater likelihood of recommending candidate for an interview.

A panel of experts comprised of actively-serving school board members experienced with superintendent selections indicated their view of the level of importance that each of the items have on a superintendent selection decision. The panel’s responses indicated a high level of content validity (CVR .99), interrater reliability \( k = 0.445 \), and internal consistency \( \alpha = .932 \) while assessing that each of the items are important considerations in assessing a superintendent candidate.

**Analysis**
Dissimilar to decades of similar research (e.g., Bon, 2009; Reis et al., 1999; Rinehart & Young, 1996; Young, 2005), the results of this study were analyzed using ordinal logistic regression rather than an analysis of variance technique. The reason for the deviation is Likert scales are ordinal and are not most appropriately treated as continuous data (Cohen, Manion, & Morrison, 2013; Blaikie, 2003; Jamieson, 2004).

**Results**
Table 1 reports the parameter estimates of the ordinal logistic regression analysis of school board chairpersons’ likelihood to extend an
interview offer to the hypothetical superintendent candidates. Main effects for candidate gender, candidate professional background, school board chairperson gender, and interaction between candidate gender and chairperson gender are presented, as are Wald Chi-Square statistics, significance levels, odds ratios, and 95% confidence intervals for each variable.

Table 1

**Ordinal Regression Results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Logistic co-efficient</th>
<th>Standard error</th>
<th>Wald</th>
<th>P value</th>
<th>Odds ratio</th>
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<tr>
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<tr>
<td>Female</td>
<td>0.126</td>
<td>0.388</td>
<td>0.106</td>
<td>0.745</td>
<td>1.13</td>
<td>0.53-2.43</td>
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<td>Professional Background</td>
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<td></td>
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<tr>
<td>Business</td>
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<td>&lt; 0.0001</td>
<td>0.12</td>
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<td>19.519</td>
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<td>0.12-0.41</td>
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<tr>
<td>Chairperson Gender</td>
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<tr>
<td>Female</td>
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<td>0.617</td>
<td>0.77</td>
<td>0.27-2.17</td>
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<td>Male-Male</td>
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**Research question 1:** Does a superintendent candidate’s gender affect the chairperson’s decision to offer an interview to the candidate?

According to the results of this study, candidates’ gender did not affect chairpersons’ decisions on whether to interview the candidates. Specifically, females were 1.13 (95% CI, 0.53 to 2.43) more likely to be offered an interview, but the difference was statistically insignificant, with Wald \( \chi^2(1) = .106, p = 0.745 \). As a consequence of these results, the null hypothesis, that female and male
candidates are offered interviews in equivalent ratios, was not rejected.

These findings mirror those of Bon (2009) who found no statistical difference in the likelihood of principals to extend an interview offer to male vs. female assistant principal candidates. Reis, Young, and Jury (1999) found female assistant principals to be more likely to receive an interview offer at a statistically significant difference. This study also found a preference for female candidates, but not to the same extent.

These results are completely contrary to what one might expect considering the significant disproportion of female superintendents in relation to the proportion of overall educators who are female.

These results are also contrary to the postulations of many (e.g., Alston, 2000; Bjork, 2000; Blount, 1998; Brunner & Kim, 2010; Grogan & Brunner, 2005; Shakeshaft, 1989; Tallerico, 2000) who state the school board member discrimination against female superintendent candidates is a primary factor for the dearth of female superintendents. Other factors might need to be explored in order to better determine the causes of female underrepresentation.

Research question 2: Does a superintendent candidate’s gender-similarity with the school board chairperson affect the chairperson’s decision to offer an interview to the candidate?

The interaction was not statistically significant; therefore, there was no evidence of a gender-similarity attraction effect from the data. Female chairpersons were 0.77 (95% CI, 0.27 to 2.17) times as likely to offer an interview to a female candidate than male chairpersons were to offer an interview to a male candidate.

However, the difference was not statistically significant (Wald \( \chi^2(1) = .250, p = .617 \)) and was at least partially a result of the fact female chairpersons seemed less likely to extend an interview to all candidates (OR = 0.92; 95% CI, 0.44 to 1.90). The null hypothesis of chairpersons offering interviews to gender-similar and dissimilar candidates was not rejected.

Research question 3: Does a superintendent candidate’s type of experience (educational vs. military vs. business) affect the chairperson’s decision to offer an interview?

This study yielded strong evidence that superintendent candidates’ professional backgrounds affect chairpersons’ decisions to extend an interview offer.

Traditional candidates were found to have odds ratios of 8.33 (Wald \( \chi^2(1) = 35.773, p < .0001 \)) compared to business candidates and 4.55 (Wald \( \chi^2(1) = 19.519, p < .0001 \)) compared to military candidates, which translates to traditional candidates being overwhelmingly more likely (833% and 455%, respectively) to be offered an interview compared to nontraditional candidates.

Perhaps the statistic most surprising to the researcher is the low
business background odds ratio of 0.12 (95% CI 0.06 to 0.24). Considering that 47% of the participants in the study self-reported having business experience in their professional backgrounds, one might predict a more favorable likelihood of business-type superintendent candidates’ being extended an interview offer, at least in comparison to military-type candidates.

Military candidates did not fare much better than their business counterparts, with an odds ratio of 0.22 (95% CI 0.12 to 0.41). Military leaders are often held up as examples of alternatives to traditional superintendent candidates (e.g., AASA, 2016; Hess, 2003; Quinn, 2007) and, therefore, a more favorable perception of military candidates was expected.

Whatever the reasons which led to these findings, the null hypothesis—traditional and nontraditional candidates being offered interviews in equivalent ratios—was rejected for both business and military candidates.

Conclusion
Candidates’ gender did not affect chairpersons’ interview offer decisions. In fact, females were slightly (13%) more likely, albeit not statistically significantly, to receive an interview offer.

This conclusion is surprising because it fails to provide evidence to support the claim by many (e.g., Brunner & Kim, 2010; Sperandio & Devdas, 2014; Tallerico, 2000) that school board members’ biases is a predominant cause of the dearth of female superintendents, at least in at the screening stage of the selection process. Notwithstanding, the results of this study do not invalidate the claim that such biases exist, but rather this study did not find evidence to support the claim that such bias influences screening decisions.

Contrary to Byrne’s similarity-attraction paradigm, no evidence for gender-similarity effects was found in this study. Male school board chairpersons were 1.30 times more likely to offer an interview to a male superintendent candidate; however, without any statistical significance (Wald $\chi^2(1) = .250, p = .617$) the null hypothesis was not rejected.

As previously noted, overall male school board chairpersons indicated higher likelihoods of interviewing all candidates compared to females, to which the insignificant difference in gender-similarity odds can be partially attributed.

The results of this study provide strong evidence that traditional superintendent candidates are the overwhelming favorites to receive interview opportunities for superintendent vacancies compared to nontraditional business (OR = 8.33 [Wald $\chi^2(1) = 35.773, p < .0001$]) and military (4.55 [Wald $\chi^2(1) = 19.519, p < .0001$]) candidates.

Such an underwhelming response to business candidates is surprising, considering that 47% of this study’s respondents have business experience, the most common professional background of respondents.

Limitations
As with any study, this study contains certain limitations. Simulation studies have the potential to yield results dissimilar from those of an actual event.

For instance, although board chairpersons may not have demonstrated gender bias in their superintendent selection process in this simulated study, when these
board chairpersons are conducting selections in the field setting, results may differ. In addition, screening decisions are made usually with a slate of resumes to assess, rather than just one as with this study.

The data were collected in a cross-sectional study, making the findings indicative of respondents’ perceptions at one point in time, rather than over time. The prioritization of reducing potential confounds across the professional backgrounds contributed to the creation of resumes with less than ideal quantities of information.

For example, resumes were only one and a half pages, rather than two or three pages as one would expect from a candidate with decades of experience in the field, as a superintendent usually has.

**Recommendations for Future Research**

More research is necessary on the selection decisions of school board members to better understand the superintendent selection process and the factors that contribute to the disparity of female superintendents.

Although this study did not detect biases by chairpersons against female candidates, further research is warranted to conclude whether or not this study marks a positive turning point away from a stereotypical male-dominated view of the superintendency.

Since the results of this study present clear evidence that traditional superintendent candidates are the preferred candidates of school board members over business- and military-type candidates, more research is warranted on the effects that traditional superintendent candidates’ gender have on the likelihood of school board members offering an interview.

An additional recommendation for future research would be to employ resumes which include a moderate to substantial amount of detail and depth of information without confounding results. This can be done by disregarding different professional backgrounds as a manipulation and focusing solely on traditional superintendent candidates.

By so doing, one can create a detailed resume rich with industry-specific information that can provide an accurate screening experience that even more closely simulates actual superintendent screening decisions.

Evaluating the perceptions of school board members from specific types (i.e., rural, urban) and sizes (i.e., < 1,000; 1,000-10,000; > 10,000) of districts might provide valuable insight into the possible existence of gender-related biases in specific contexts.

Such insights will not only help encourage and guide female superintendent aspirants to more fruitful opportunities but will also provide invaluable information about the type of contexts that might need an enhanced focus in anti-discriminatory practice research and training. If the disparity of female superintendents is not largely due to school board member biases as many have posited, then researchers, practitioners, and activists need to identify other potential factors to examine and correct in order to rectify the disproportion. A simultaneous examination of self-selected factors and external factors might prove useful to that end.

This study was designed to examine whether superintendent candidates’ and school board chairpersons’ gender and candidates’ professional background impact resume
screening decisions by school board chairpersons. While the results did not support the presence of gender bias in the superintendent selection process, it did indicate overwhelmingly that the professional experience of superintendent candidates matters.

Specifically, candidates with traditional experience are highly favored over nontraditional candidates, suggesting that even with the neoliberalistic influence of late, a preference for nontraditional superintendent candidates has not gained traction in the minds of school board chairpersons as some (e.g., Eisinger & Hula, 2004; Hess, 2003, Quinn, 2007) have hoped.

For traditional superintendent candidates, or those to aspire to one day be, this is promising information. For anyone interested in becoming a nontraditional superintendent candidate, these findings suggest that there is still a preference for those with educational experience at some level prior to pursuit of a superintendency. Such experience may provide a candidate with greater credibility amongst the educational community they are attempting to join (Thompson, Thompson, & Knight, 2013) as well as increased social acceptability by selecting board members.

In sum, this study’s findings support the notion that the superintendency may be becoming more accessible to candidates of both genders (at least from the employer selection perspective) and that board member discrimination against female candidates, an oft-cited explanation for the underrepresentation of female superintendents, may not be as present as many (e.g., Brunner & Kim, 2010; Sperandio & Devdas, 2014; Tallerico, 2000) postulate.

This should provide hope for female educators aspiring for the superintendency, but it again raises Glass, Björk, and Brunner’s (2000) question: “What deters large numbers of women from becoming superintendents?” Are issues related to self-selection out of such positions more of an explanation than discrimination at the selection level? If so, what can be done about it? Although beyond the scope of this study, these questions warrant further investigation.

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Superintendent Evaluation Frameworks for Continuous Improvement: Using Evidence-based Processes to Promote the Stance of Improvement

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Abstract

The researcher seeks to address the needed changes to superintendent evaluation by suggesting an integrated formative evaluation process that balances both the need for accountability and ongoing professional growth and support (Hallinger, Heck, & Murphy, 2014; Duke, 1990). The nuances of the superintendent and school board relationship present unique challenges that create additional obstacles and opportunities for establishing and maintaining a cyclical formative process for evaluation. A brief overview of research that includes a rationale and overview of current challenges to the superintendent evaluation process are also discussed. Practical tips for improving the evaluation process including adoption of a standards-based framework, utilizing stakeholder input, providing board director professional learning and ongoing support are offered.

Key Words

superintendent evaluation; school administrator quality; school board governance
In recent years, the adoption of both teacher and principal instructional frameworks for evaluation purposes has also created an urgency to rethink and re-align the superintendent evaluation processes in a similar way. That, coupled with a general dissatisfaction by school boards and superintendents of the usefulness and guidance of such evaluations, has demonstrated a clear need to reform traditional evaluation practices (Mayo & McCartney, 2004).

Teachers and principals utilize evidence-based procedures in partnership with their respective supervisors for evaluation purposes, both formatively and summatively, to recognize strengths as well as areas for improvement (Hallinger, Heck, & Murphy, 2014). In effect, this provides opportunities for accountability of one’s classroom instruction as well as a means to encourage professional growth (Duke, 1990).

This process allows for both parties (the teacher and their supervisor) to provide evidence, utilize student voice and student work artifacts, as well as teacher voice, in a way to capture a comprehensive picture of their performance over time. In theory, the teacher and supervisor are partners in this process, with the ability to observe, provide feedback, and solicit further information along the way to support the growth of that teacher. This practice is relatively consistent for the principal evaluation process in that principals solicit evidence of their performance through working with a variety of stakeholders.

The supervisor of a principal ought to be a partner in this process of improvement. In a sense, there is a level of two-way partnership and negotiation of performance utilizing evidence-based conversations that both sides can develop.

**Role of the Superintendent**

The role of the superintendent is dynamic and complex, with emerging demands to navigate both internal and external politically driven responsibilities.

Historically, there have been five chief roles of the superintendent that include teacher-scholar, district manager, democratic leader, applied social scientist, and communicator (Kowalski & Brunner, 2011). As Houston (2001) so aptly describes, the focus had been on management of the district that include items such as books, bonds, buildings, buses, budgets, and bonds.

However, the emphasis has shifted to a process-oriented approach to leading that emphasizes the need for communication, connection, collaboration, community-building, curriculum, and child advocacy within the school district (Houston, 2001).

This relationship-oriented role also considers community stakeholders such as school boards, community and political-based organizations. Kowalski (2005) echoes this sentiment when connecting the need for effective, relationship-enhancing communication, and the need for sustaining change.

There is an increasing level of accountability to successfully navigate the political underpinnings of both school board members’ agendas as well as community-based interest groups and political establishments (Glass, Bjork, & Brunner, 2000). Superintendents must learn how to “predict the political landscape” of a given community in order to be successful (Tekniepe, 2015). The Interstate School Leaders Licensure Consortium (ISLLC) Standards for School Leaders align to this shift by developing
updated standards in 2008. Standard six reads:

“An education leader promotes the success of every student by understanding, responding to, and influencing the political, social, economic, legal, and cultural context.”

With ever-changing school boards and the need for effective communication, it is essential school leaders remain literate regarding the “micropolitics” within their districts (Hoyle & Skrla, 2000). Superintendents and school board member relationships are in constant development and must jointly navigate clear roles of policy-making and administrative duties. This is even more difficult in an increasingly turbulent political atmosphere (Kowalski & Brunner, 2011). Hoyle et al. (2000) explains this political navigation through the suggestion, “[o]ne way to develop or enhance necessary political skill is for superintendents to understand that the conflicts and games they are looking at in their own districts are often representative of political phenomena that play out over and over in school districts across the country” (p. 410).

Maintaining effective communication and strong relationships between boards and superintendents in the midst of strong political pressure is crucial.

The health of the superintendent and board relationship is often reflected in the superintendent evaluation. A significant number of superintendents believe they are not being evaluated against the criteria in their job description but rather the quality of the interpersonal relationships between them and board members (Glass et al. 2000).

Recent research confirms the finding that poor relationships with the school board is a predictor of superintendent exits from districts (Grissom & Andersen, 2012). As Hoyle et. al. (1999) writes, “[t]he annual evaluation of the superintendent by the school board can be a process characterized by mutual respect that emphasizes improvement of the leadership performance of the superintendent or, conversely, it can be an intensely stressful process that fosters the worst forms of political game playing” (p. 405).

For these reasons, it is imperative to have a sustainable, evidence-based evaluation process to identify and evaluate the district and superintendent goals in light of the socio-political pressures at play.

The dynamic of a school board of directors as an evaluator of the superintendent brings with it different challenges when adopting the same process of evaluation as teachers and principals.

School board directors maintain a level of governance that remains primarily outside of the daily operations of a district. Therefore, it is difficult to create a sense of “voice” or utilize an evidence-based process when only one side of the conversation is presenting evidence: the superintendent. DiPaola (2010) suggests a multi-tier approach to superintendent evaluation that includes multiple data sources offered by both the superintendent and the school board.

However, while there are opportunities for board members to offer evidence and feedback, including informal stakeholder input, typically they remain observers of the superintendent from somewhat of a distance.

Because of this challenge, the superintendent evaluation tends to focus on proving that seemingly arbitrary goals were met or not, and if so, to what level. The process tends to rest primarily in measuring accountability of actions rather than
maintaining a balance between accountability and professional growth as is the case in modern teacher and principal evaluation systems. Rather, there ought to be an opportunity to create open dialogue focused on improvement and support rather than solely on accountability in what is often an isolated district level position.

The superintendent evaluation can be stressful and unpleasant for both the superintendent and the school board (Vranish, 2011). Board members often lack the understanding of how to utilize a system for evaluation in a sustainable way, therefore creating inconsistent practices from year to year and relying on the superintendent to train them on how to evaluate effectively.

When the process of evaluating the superintendent is implemented effectively, there is great potential for improving the system-wide operations of a district. The focus would be on a comprehensive and multi-faceted picture of a district and its superintendent rather than a somewhat subjective assessment that could possibly result in fragmented perspectives and an incomplete picture of performance. Starting with policy, an effective process could result in a sustainability from one year to the next, despite changing board members or superintendents (Peterson, 1989).

The superintendent evaluation ought to align with a two-fold purpose of providing the school board with a system of accountability and the needs of superintendents for thoughtful feedback that promotes professional growth (Gore, 2013).

For example, Washington State’s Superintendent Framework developed by the Washington State School Directors’ Association and Washington Association of School Administrators (2013) adopted six standards aligned to different components of the superintendent’s responsibilities:

- Visionary Leadership
- Instructional Leadership
- Effective Management
- Inclusive Practice
- Ethical Leadership
- Socio-Political Context

The superintendent is evaluated using these standards through both a formative and summative process of data collection and evidence-sharing aligned to rubrics for each of the standards.

These standards include a balance of both student learning outcomes and district leadership and management expectations. There are clear expectations and standards for accountability, but within that system is built a process for growth and ongoing professional learning support.

Even with the use of a standards-based evaluation tool, it is easy to think that the traditional evaluation methods are a thing of the past. However, if the superintendent continues to prove his or her performance based on subjective and often misaligned evidence provided only by the superintendent and documented within a framework, that is not a transformative change.

If the school board uses a similar method of subjectively approving said evidence based on their opinions of performance during one or two meetings per year, that is not a transformative change either. The school board would continue to utilize similar evaluation practices, but with a different look and with a slightly different feel.

The superintendent evaluation should not be an event, but rather a process where all board members offer input through articulating high and clear standards and discussed at set times throughout the year (Glass, 2014). Utilizing a
clear framework also requires a pre-determined annual plan that includes both summative and formative opportunities to provide feedback by multiple stakeholders in a systematic and authentic way.

Standards addressing the many facets of the superintendent role within a predetermined framework ought to be utilized to allow opportunities to engage with multiple stakeholder voices from across the relevant educational community.

**Practical Tips**
School boards can adopt practices to ensure an authentic, comprehensive and growth-oriented evaluation system through implementing specific practices into this work.

1. Utilize a standards-based evaluation framework for both the formative and summative evaluations. Integrate regular opportunities to add evidence in meaningful ways. For example, during school board meetings, the superintendent report ought to be organized by standards aligned to the framework that then is added as evidence for the evaluation.

2. Between school board meetings, any written communication by the superintendent or other methods of updates between the superintendent and the respective school board members can also be categorized to include the standard in which it is aligned. This also becomes evidence to be included within the framework.

   Remember, the framework itself does not change the way in which the evaluation is completed; it is *how* the framework is used as a tool to facilitate the process that makes the transformative shift.

3. Consider ways to solicit representative stakeholder feedback in a valid and systematic way that includes voices from both the community as well as personnel within the district. This ought to include consideration of the socio-political pressures at play both internally and externally within the community and the greater political landscape.

   Recognize and educate board members on the potential positive and negative bias that unsolicited correspondence may exhibit. Perform due diligence to seek out multiple perspectives from a variety of stakeholders who work regularly with the superintendent.

4. Develop multiple measures and collect different types of data including superintendent input, board input, district student learning, and other programmatic data aligned to the framework.

   It is important in this age of student learning data and a focus on rigorous academics that there are other aspects with which to include in an evaluation.

   Also keep in mind that newer innovations or programmatic improvements take time (3-5 years) to correctly implement. Often there is an implementation dip before improvement can be measured.

   This improvement comes, of course, through documentation of higher standardized test scores but is also seen and measured through school and district climate, increases in graduation rates, and wider variety of programs to meet the needs of each student.
5. Provide opportunities for school boards to engage in professional learning of the superintendent evaluation process ahead of time. The board needs to fully understand and be equipped with sufficient “evaluation literacy” to perform their duty effectively.

Often this comes in the form of a school board director book study, a pre-conference to discuss how the process will occur throughout the year, and, of course, understanding the policy that aligns with the evaluation process.

Inviting an expert in to help facilitate the process may also be appropriate. With this professional learning comes the inherent need to ensure all board members fully understand the context of the superintendent and district including present level of the needs and recognition of successes.

6. Once complete, allow time for school boards and their superintendents to reflect on the process of the evaluation to make refinements. Ensure this process is collective and formal by designating specific and intentional opportunities after each formative and summative evaluation session for reflective debriefing. Utilizing debriefing protocols is recommended for boards that may not be familiar with how to formally reflect and debrief in a constructive and proactive way.

School board directors and superintendents are held accountable for setting the expectation for improving student learning and ensuring high levels of performance from students and staff.

It is imperative to lead through defining a well-articulated process for evaluation in partnership with one another that allows for and celebrates the dynamic relationship between the school board and superintendent.

Strong school board governance and superintendent relationships grow due to high levels of support as well as aligned accountability to create an atmosphere of transparency, trust, and continuous growth.

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Building a Networked Improvement Community to Promote Equitable, Coherent Systems of Science Education: How a State-Level Team Can Support District-Level Change Efforts

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Abstract

This paper describes a Networked Improvement Community comprised of a network of 13 states focused on improving coherence and equity in state systems of science education. Grounded in principles of improvement science adapted from healthcare, we are developing and testing resources for formative assessment in science, with the aim of developing systems where actors at every level of the education system are oriented toward a common vision for science, and where there is a common commitment to equity. The paper describes these strategies and implications of this work for district-level change efforts.

Key Words

science education, networked improvement communities, coherence, equity
The purpose of this paper is to describe a partnership between two universities and a professional association of state education agency leaders in science.

The paper describes the aims of the partnership and its key activities, which involve not only state leaders but also teams comprised of district administrators, teacher leaders, and other organizations that are integral to creating coherent and equitable systems of science and education.

The partnership describes the roles that education leaders can play in providing more coherent guidance to teachers regarding subject matter teaching, a key condition for implementing changes associated with adoption of ambitious new standards. The paper is written from the perspective of leaders in this partnership.

**Need for the Partnership**

Many educators see their state department of education as an obstacle to improving teaching and learning. Teachers can view the state as a source of incoherent guidance about what they should be doing in their classrooms, even when state leaders make efforts to bring standards, assessments, and curricular frameworks into alignment.

Leaders try to create instructional coherence by buffering teachers from these different influences (Spillane, Parise, & Sherer, 2011). When standards change, teachers and principals brace for more incoherence, rather than embracing the possibility of renewal and reform.

But what if state leaders worked together with other stakeholders to craft more coherent guidance and to build supports for teachers and building leaders to develop a common understanding of equitable teaching and learning? Can state leaders, working in collaboration with teams from multiple states, do anything to increase the coherence of their state systems and achieve ambitious equity goals?

Those are the questions that a network of state teams are asking as part of a research-practice partnership between the Council of State Science Supervisors and university researchers at the University of Colorado Boulder and the University of Washington.

This partnership, funded currently by the National Science Foundation, is organized as a networked improvement community, or “NIC.” In a NIC, a network of educational organizations forms to address a specific, persistent problem of practice, and collaborates to design and test solutions (Bryk, Gomez, Grunow, & LeMahieu, 2015). In a NIC, the roles of researcher and educator are intentionally blurred.

In this particular NIC, the researchers bring relevant expertise in designing improvement strategies while the educators contribute by co-designing strategies and testing them as well as collecting and interpreting the resulting data.

**Improving Coherence and Equity as a Persistent Problem in State Systems**

To describe a state system of education as providing coherent guidance to teachers means at least three things. First, it means that all of the key actors in the system share a common vision of what improvement looks like. When that is true, the system is said to be “vertically coherent,” because at whatever level we look in the system, we see
people espousing similar ideas about how to improve teaching and learning (National Research Council, 2001).

Second, coherence means that the key components that shape what teachers do—standards, assessments, curriculum frameworks, and professional development—all aim toward that common vision. When this is the case, the system is said to be “horizontally coherent” (National Research Council, 2001).

Last, a coherent system is one in which people are engaged in ongoing work to refine, build, and test the guiding vision together. Coherent systems at any level are the result of people working together both to “make sense” and “give sense” to current practice and how it needs to change, in order to achieve a particular vision for practice (Honig & Hatch, 2004).

It is difficult to achieve coherence in state systems, and as a consequence, such systems reproduce inequities of opportunity and outcomes. Actors may have divergent visions for education grounded in different value systems that are difficult to change. They may have one vision for their own children and another for “other people’s children” that limits opportunities depending on students’ standardized test scores, income, or race (Delpit, 1988).

Different actors have authority for the key components of systems, and these are subject to political influence at multiple levels of the system. Schools under accountability pressures may get more guidance about what should be happening in classrooms, often at the expense of students experiencing a rich and varied curriculum.

There are also limited opportunities for actors at different levels of the system to shape visions and discuss them with others—especially teachers, parents, community members, and students. These have the result of replicating historical inequities as to who is at the table for reform.

In our NIC, many of the states have adopted or are considering adopting new standards. Changes to standards present both risk and opportunity when it comes to coherence and equity. On the one hand, the risk is that few resources are invested in helping people understand the new standards or the vision that guided their development.

In addition, curriculum and assessment inevitably lag behind, leaving teachers with uncertainty as to how to realize the vision. At the same time, new standards can provide an impetus for change and hope for new possibilities for teaching and learning, especially when they are ambitious and when there is an expectation that all students will meet them.

**Framework for K-12 Science Education: An Impetus for State-level Change**

Five years ago, the National Research Council’s (2012) *A Framework for K-12 Science Education* presented a new vision of equitable teaching and learning in science and engineering.

That vision presented some core assumptions about science and science learning—grounded in decades of research—that guided the development of the Next Generation Science Standards:
• Children are born investigators
• Science teaching should focus on a few core ideas and disciplinary practices
• Proficiency in science and engineering requires both knowledge and practice
• Understanding develops over time
• Science teaching should connect to students’ interests and experience
• Systems should promote equity by expanding opportunities to learn science and preparing teachers to implement inclusive instructional strategies

Shortly after the Framework was released, a professional association of state leaders in science, the Council of State Science Supervisors, organized a project to help states prepare to implement its vision.

The project, Building Capacity for State Science Education (BCSSE), was unprecedented in the degree to which state leaders were proactively planning ways that their states would need to change, to make the vision of the Framework a reality.

Teams from nearly all 50 states came together to develop implementation plans, and they brought researchers in to help them think not only about the shifts in science teaching that would be required, but also about the organizational changes needed to create a more coherent, equitable system focused on the vision of the Framework.

A marker of success of this group is that standards adopted in nearly every state since the publication of the Framework have been based on its vision.

Within these teams, the leaders in each state have been and continue to be linchpins for creating horizontal coherence. In a recent survey of state science leaders in education, they reported most frequent involvement in reviewing or developing state science standards, designing statewide science assessments, designing or conducting science professional development, identifying resources to share with district leaders, and establishing partnerships between business, industry, and non-formal education groups (Hopkins, 2016).

The influence they have over key components of the system and their role as brokers and collaborators make them key leaders in efforts to promote coherence and equity in ways that can impact schools, even though they are far from the classroom.

The Council of State Science Supervisors, moreover, is an important learning community for its members. Through structured activities like conferences, workshops, and webinars, as well as via more informal interactions with other educational leaders and researchers, state science leaders have opportunities to learn about and engage deeply with research and research-based information and expertise to inform their state’s implementation of the Framework.

Much of this information derives from National Research Council reports that outline research-based strategies for
implementing the Framework across different components of the education system (e.g., via assessment, professional development) and at different levels (i.e., elementary, middle, high) (Hopkins, 2016). As such, CSSS members serve as key brokers of research-based ideas about improvement statewide, as they often draw on and share the ideas they learn about in their work with district and school personnel.

**Looking to Improve Improvement: Building a Networked Improvement Community of Science Education Leadership Teams**

To extend the work of BCSSE, the Council of State Science Supervisors formed a partnership with researchers at two institutions—the University of Colorado and University of Washington.

The aim of this partnership and NSF-funded project, Advancing Coherent and Equitable Systems of Science Education (ACESSE), is to enable a network of teams to “get better at getting better,” that is, to learn from their efforts to implement the vision of the Framework in ways that can advance the goals of coherence and equity.

The partnership is organized according to key principles and practices of improvement science: it is sharply focused on persistent problems of practice, organized around a clear set of shared aims, and—in ways that extend the BCSSE initiative—engages an expanded range of “system actors” in systematic testing of change strategies.

To help the network understand problems of coherence and equity, the network is undertaking a systematic investigation of what is happening in each state. This includes a survey of teachers fielded by the researchers to assess the distance between teachers’ own visions for science teaching and that of the Framework.

That survey is also identifying teachers’ own areas where they would like to grow as professionals—to help the network focus its efforts on areas where there is energy and broad educator support for improvement. State teams are also holding focus groups—using a protocol developed collaboratively by the network—to attain better insight into different stakeholders’ views of science education.

Each state team is formed purposefully to include people from different sectors in education—people judged to be “key influencers” of system components and overall direction of science education in their states.

Across states, team members include not only researchers from higher education and leaders from state departments of education, but also leaders from districts, education nonprofits, educator associations and more. The purposeful effort to build teams that include community representatives is an attempt to include new voices in systems reform.

As other networked improvement communities seek to do, the partnership is focused on improving a “high leverage” practice, namely formative assessment. Ever since Black and William’s (1998) famous review, educators everywhere have sought to improve formative assessment, on the premise that it can dramatically improve student learning. But formative assessment is a good leverage point for coherence for
another reason: it sits at the intersection of curriculum, instruction, and standards, and to get better at it, teachers need professional development. In other words, improvement requires horizontal coherence.

To be effective, formative assessment also needs to be guided by a vision for teaching and learning, another reason that it is a good leverage point for the partnership’s effort to bring system actors into alignment with the Framework’s vision for equitable science teaching and learning. Finally, certain kinds of formative assessment (e.g., Tzou & Bell, 2010) can draw attention to ways that science teaching does or does not connect with students’ interests and experiences, a key strategy for promoting equity.

This focused attention on deepening formative assessment practice is only part of the process. The partnership is collaboratively designing a set of resources state teams can use to help build a common understanding of the vision of the Framework, while the states teams are helping adapt and test these resources based on problems identified from surveys and focus groups.

The research team is developing a system of “practical measures”—measures that can be used to signal improvement goals and assess what strategies are helping states accomplish their aims (Yeager, Bryk, Muhich, Hausman, & Morales, 2013)—for states to implement.

**How a State-Level Team Can Support District-Level Change Efforts**
State level teams are, of course, far removed from particular classrooms. But state teams have taken teachers’ visions into account in developing needed resources, and district curriculum leaders are part of the effort. Some state teams have adapted ACESSE’s processes for analyzing their state system’s coherence and applied it to the study of their district and schools. Some are also adopting the partnership’s the iterative design process for creating, getting stakeholder feedback on, and testing resources.

Finally, state leaders are working with local educators to implement activities developed by the network and measure their effects on participants.

The methods of improvement science being employed in the partnership may be applied to other subject areas to support district-wide reform. These include the development of specific aim statements, the use of system mapping tools to identify key leverage points for improvement, and the iterative cycles of design and testing of strategies for improvement.

The focus on formative assessment is likewise an appropriate focus for district-wide reform.

What is not typical—but important in our view—is to find districts being guided by subject-matter specific visions for teaching and learning. Research suggests that these subject-matter specific visions are critical guides, if formative assessment is to have an impact on student learning outcomes (Penuel & Shepard, 2016).

Therefore, though common processes may be used for supporting improvement, subject matter expertise and pedagogical content knowledge in the disciplines is a necessary condition for success.
The partnership’s specific tools for supporting equitable, three-dimensional classroom assessment may also be used across a district. The resources and activities designed by the partnership can be just as easily implemented by a network of district science coordinators, within a building-wide professional development, or by a peer-led professional learning community.

Finally, they relate directly by linking what teachers do every day to the “why” of what they do—the vision from the Framework around which states hope to organize their systems of science education.

Ultimately, leading district-level change requires distributed leadership at the district level—that is, multiple departments, school leaders, and teacher leaders working together toward common aims in the face of changing environments and with limited resources.

But state leaders can clear the way for those leaders and provide models for getting everyone in the building on the same page with respect to a vision for teaching and learning. Such models are crucial for implementing any new policy.

By modeling participatory, collaborative approaches to reform such as networked improvement communities, state leaders show the way for principals to lead their school in a way that mobilizes support around shared reform goals and that bolsters morale.

Leading for coherence and equity in turbulent environments requires leadership activity at all levels.
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References


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