Educational Leadership and Administration

Teaching and Program Development

Educational Leadership and Administration: Teaching and Program Development

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Foreword

Louis Wildman, Guest Editor
California State University-Bakersfield

In 1989 Jodi Servatius and I co-edited the first volume of what was then called "The Journal of CAPEA," and later re-named *Educational Leadership and Administration: Teaching and Program Development*. In reviewing the articles in that first issue, I noticed that many anticipated our present topics. Then CAPEA President, Rosemary Papa urged us to "question our own visions of education," and "be sensitive to divergent gender and ethnic experiences." Randall Lindsey, a specialist in equity issues, co-authored two articles.

The first issue included authors from California universities: California State Universities at Bakersfield, East Bay (then called Hayward), Los Angeles, San Diego, and San Jose; and outside California: Memphis State University, Montana State University, North Carolina State University, and the University of Washington.

Raymond Taylor and Bettye Macphail-Wilcox suggested we consider the M.D./J.D. education models, Ardy Bowker suggested a "cultural perspective" on leadership, Kathleen and Carl Cohn and Randy Lindsey promoted a bilingual special education internship program, William Zachmeier suggested peer coaching, William Webster described a school administration program for foreign students, and I identified source material in the humanities for course work in education administration. The first issue concluded with "A Brief History of CAPEA" by San Diego State Emeritus Professor Howard Holt.

Volume 32 begins with an examination of *equity*—the central goal of education reform. But what does "equity" mean? Should everyone be offered the same opportunities under the same rules and with the same resources? Should equity aim at developing equal competencies amongst cultural diversity? Michael Szolowicz explores the complexity of what equity means and how administrators can become effective equity-minded leaders.

With many states reducing funding for public education, Michael T. Miller, Mei-Yan Lu, and G. David Gearhart emphasize that fundraising has become a needed practical skill for school administrators. As administrators recognize the need to engage in fundraising and agree on the needed skills, they question what impact that time spent on fundraising will have on the other roles of a school administrator.

Principals have an important impact on student achievement. Elaine Wilmore reviews the research literature on student study skills for principals, to help them help teachers apply these findings while collaborating to address the achievement gap.

The two articles that follow, by Stanley Pogrow and Jianjun Wang, represent different views about how to reform the quantitative methods course in education leadership programs.

The next section is a report about the impact of a two-year district coaching program on novice administrators' preparation. Here, Marco Nava, Illeana M. Davalos, Martha V. Cortes, Jeffrey A. White, and Jonathan Lesser of the Los Angeles Unified School District present evidence supporting on-the-job coaching.

The last section is a book review of *Inquiry in Tandem: Student and Teacher Learning in Secondary Schools* written by Christine D. Clayton and James F. Kilberne, Jr. (Peter Lang Publishers, 2020). The book review was conducted by Yvonne L. White, Hayward Unified School District.

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What is Equity? A Literature Review Informing California Administrator Performance Assessment Expectations

Michael Szolowicz
California State University, Bakersfield

The newly implemented California Administrator Performance Assessment (CalAPA) expects future administrators to create more equitable schools. The CalAPA's mandate toward equity creates an imperative to further explore what is meant by equity and how administrative candidates can become effective equity-minded leaders. This literature review explores models of equity (Nussbaum, 2011; Rawls, 1971 & 2001; Sen 2009) relevant to the CalAPA and, towards developing effective equity minded leaders, offers critique of the models, with suggestions of key principles equity minded leaders might apply in practice.

The newly implemented California Administrator Performance Assessment (CalAPA) forms both a process and a performance-based instrument for developing equity-minded educational leaders. The CalAPA consists of three main cycles, the first of which explicitly addresses the equity goals of this wholesale and systematic reform effort, "Leadership Cycle 1: Analyzing Data to Inform School Improvement and Promote Equity" (California Commission on Teacher Credentialing, 2018a). The directions for Cycle 1 thrice employ equity language within the first two sentences of the introduction, "Effective equity-driven educational leaders develop a collective vision through the use of multiple measures of data that focus on equitable access, opportunities, and outcomes for all students. Collaborative leadership skills related to developing a vision for equity …" (California Commission on Teacher Credentialing, 2018a, p. 1) The CalAPA stipulates that "equity gaps"–discrepancies between performances in academic achievement or well-being between various student demographic groups—be identified, addressed using research-based practices, and reduced or eliminated.

The goal of equitable access opportunities, and outcomes for diverse students, has long been a goal of educational reformers who see equity as a foundational moral imperative (Anderson, 1998; Apple, 2000; Ball, 1997; Foster, 1986; Ylimaki, 2011). The CalAPA seeks to systematically develop and assess this moral imperative through the CalAPA process. Equity appears over two dozen times across the writing templates for the three CalAPA cycles such as in Cycle 1, Step 1's requirement that candidates answer, "How does understanding the political, social, economic, legal, and/or cultural context(s) influence your ability to provide equity-driven leadership?" and Cycle 3, Step 4's requirement that the candidate "Reflect on and cite evidence of how effectively during this cycle of coaching and observation you maintained a high standard of professionalism, integrity, and equity during your coaching interactions with the volunteer teacher." (California Commission on Teacher Credentialing, 2018b)

Helpfully, the CalAPA support materials such as the Cycle 1 Assessment Guide (California Commission on Teacher Credentialing, 2018a) defines equity, within the parameters of "equity driven leadership," as the ability to:

1. conceptualize schools as complex organizations comprised of a network of dynamic and interdependent thinking components.
2. pursue school change and improvement through systemic change and capacity building, and
3. create and articulate a shared vision of a school as a place where all students are fully engaged, inspired, empowered, and their voices are heard.

Building on this definition of leadership, the same guide defines an "equity gap analysis," as encompassing "discrepancies," between improvement plan goals and actual student performance regarding "previously underserved students." In providing these definitions, the CalAPA provides candidates focus and clarity regarding the very real performance task they must complete to earn their Preliminary Administrative Services Credential and begin their administrative careers. Specifically, use of terms such as "equity gap," "shared," "all," and "previously understand," implies that "equity" means simply "equality."

While equity is a necessary and appropriate objective, particularly for the focused and immediate task of passing the CalAPA, the concept of "equity," as developed within the philosophical field of social justice, is neither clear cut nor simple (Nussbaum, 2011; Rawls, 1971 and 2001, Sen, 2009). Theories of justice recognize that the world is a very diverse and complicated place where even concepts like "justice" and "equity" are open to multiple interpretations that can be heavily influenced by multiple factors including gender, culture,

ethnicity, nationality, religion and more, that together compose each individual's identity. What is "just" for one may not be "just" for another. Indeed, depending on which identity factor is being examined, what is just for one aspect of an individual's identity may be unjust for another aspect of the same individual's identity. Navigating these complexities forms the key challenge in building a more just and equitable world.

The CalAPA as a state-mandated policy reform effort provides an impetus to revisit theories that may better equip future administrators to successfully navigate the turbulent waters of justice. The very fact that the state had to make equity an explicit and assessed instructional goal suggests the difficulty of addressing the topic, as does the lack of social justice leadership described in Ruich and Taylor's (2014) study of principal leadership. Asking the question, "What is equity?" forms a clear although deceptively simple starting point for this inquiry. I proceed to address the question through a literature review (Fisch & Block, 2018; Palmatier, Houston, & Holland, 2018) that first describes my systematic process for choosing relevant literature, then explores and critiques the literature's key concepts, and concludes with suggestions for application to educational administration preparation and practice.

Literature Review Process

As professors responsible for preparing our students for success on the CalAPA, success in their future administrative roles, and ultimately in fulfilling the moral imperative of developing a more just society, equipping our students with a more deeply grounded view of justice and equity becomes our own imperative. Discovering and developing the educational moral imperative drives this study. As a former practicing principal and assistant principal in diverse and comprehensive public high schools, I am also aware of the imperative to find theory that can be easily recalled and quickly applied to the myriad of problems and dilemmas administrators are called upon to address each working day.

In addressing this complex set of expectations, the CalAPA itself provides clues to an effective social justice starting point. The CalAPA not only requires equity as an outcome of the administrative process, but also defines three key sets of skills necessary to achieve these results: analyzing data, facilitating communities of practice, and coaching individual teachers. These skills can also be categorized as, "capabilities," or what a person is capable of actually doing or being.

The study of capabilities forms one significant strand of justice theory most recently promoted by Martha Nussbaum (2011) who suggested that entrenched social inequities can best be addressed by developing specific capabilities, of which specific skills such as those assessed on the CalAPA, could reasonably be part. Nussbaum, as shall be explored in more detail later, contributed to justice theory by providing specifics and definition to a broader capabilities approach as explained by Amartya Sen (2009). In turn, Sen's work on practical and measurable capabilities was a respectful but pointed critique of the more theoretical approaches taken in the seminal work of John Rawls (1971, 2001). While Sen focused on developing real skills or capabilities that could be measured in real life, Rawls focused on theoretical work revolving around hypothetical questions mostly involving institutions.

The works of Rawls, Sen, and Nussbaum therefore form a substantive strand of social justice theory that seems to inform the CalAPA's development. As such, this review focuses on their work by seeking first to understand and explain key concepts. While these three triumvirate authors are interrelated in their thinking and even critique one other, other works

that directly critique or comment upon their work is also explored in this article, particularly as they relate to practical application within a schooling setting.

Finally, social justice theory involves two foundational but opposing concepts. These two concepts are reflected in the selection of the literature reviewed to provide a balanced approach and because the literature itself addresses them. Deontological approaches argue that the morality or justice of a position is judged by the action's adherence to a rule or set of rules. In other words, justice is defined by the fulfillment of duty or obligation. Deontology contrasts with a teleological approach. Teleology takes a person's propensities and inclinations as they are given and seeks to fulfill them. Teleological approaches can be defined as seeking the "good" or the benefits for people while deontological seeks the "right" or the correct principle.

Sen (2009) illustrates the tension between these two views through the story of Arjuna and Krishna. In this Sanskrit epic, Arjuna and Krishna discuss a massive impending battle. Arjuna takes a deontological approach when he discusses the rightness of his army's cause. On the other hand, he also expresses doubt regarding the massive bloodshed that will accompany his duty to principle. In pondering the bloodshed, including the bloodshed of men whose only connection to the argument at hand are family ties to either side, Arjuna takes a teleological approach emphasizing human good over duty to principle.

Once I have referenced the relevant literature, I will proceed to summarize, synthesize, and critique the essential philosophy, goals, and means to achieve these goals.

Findings and Discussion

This section presents and discusses the key findings by first addressing diverse individual starting points and proceeding to present and critique the ideas of Rawls (1971, 2001), Sen (2009), and Nussbaum (2011) in building a more just society.

A Fair Start

Addressing the idea of an equitable beginning forms a key social justice challenge: the world is diverse, some start life with more privilege than others, and these inequities can be reinforced generationally (Brighouse and Swift, 2008). By asking, "what is a fair start?" Sandel (2011) neatly summarizes the concept of an equitable beginning as a key social justice concept. Sandel includes all income, wealth, honors, and access to privilege as subject to justice and suggests that the basis of the moral claim individuals have to these desirable outcomes is the defining beginning of justice. For example, the students in his Harvard class could argue that they occupy their seats through their own hard work and skill, a solid moral claim. However, a survey of the class revealed almost every student was also first born in their families, a fact not one student had any control over. Hence, did the students attend Harvard because of their own hard work and skill, talents over which they had agency, or did they have talents and skill because they were first born and these are traits typically associated with eldest children? If the latter is true, the students' moral claim to their merit of attending Harvard, something over which they had little or no agency, weakens the claim of justice.

Rawls (1971, 2001) takes a similar approach; indeed, Sandel even cites Rawls' concept of the "original position" in his example. In the "original position," Rawls hypothetically asks each person to imagine their existence but without any knowledge of their future gender, wealth, nationality, ethnicity, or any of the other categories we use to define and separate ourselves.

Rawls describes this hypothetical process as being, "behind the veil," where our future attributes are hidden from view. From this original position, any proposed law, policy, or practice can be assessed by simply asking how agreeable the proposal is to those behind the veil. If the proposal is agreeable to those hypothetically stripped of the standard identity-forming categorizations, then the proposal is likely just to all.

Sen (2009) and Nussbaum (2011) agree with Rawls, Sen going so far as to dedicate his book to his Harvard colleague, but he then stakes out a more practical approach. After acknowledging and critiquing that the "original position" can never actually be achieved in real life, Sen argues we should seek to advance but not necessarily perfect human experiences. Sen seeks capability that leads to the well-being of both the individual and others. Individuals should have the agency, that is the freedom and ability, to achieve those goals of well-being that are important to them.

I should share a note here on the difference between the way "freedom" and "ability" are being differentiated here, as both are necessary for agency. Freedom speaks to the *institutional* ability to act, whereas ability refers more to the individual's ability to act. For example, a prisoner who can read but is denied books has the ability to read but lacks the freedom to do so. Alternatively, a prisoner granted with a plethora of books, but who is illiterate, has the freedom to read but lacks ability. Sen's and Nussbaum's justice is founded on the capability – the combination of freedom and ability through agency – to actually do things. Nussbaum then takes the argument further by suggesting what those "things" might actually be, including: life, bodily integrity, bodily health, imagination, emotions, practical reason, affiliation, respect for other species, play (yes, as in child-like free time), and control over their environment.

Even this brief foray into the relatively simple question of what justice even is, not even how we go about achieving justice, reveals deep philosophic disagreement. Is justice defined by just institutions, just capabilities, or both? Nevertheless, some common language and concepts seem to emerge. Generally, justice is found in improving capabilities, opportunities, and freedom. Generally, people will choose more positive benefits such as income and prestige over less. Generally, people want a fair start and level playing field, in other words, the language of equity.

Building Justice: The Difference Principle

People will usually choose more opportunity over less, more freedom over less, and more benefits such as wealth, income, and prestige, over fewer benefits. The problems challenging, constraining, and even prohibiting the accomplishment of an idealistically just society are immense and relate to facts of nature: not everyone is born with the same abilities and societal circumstances, and not everyone has the freedom to discover, develop and utilize their abilities. These institutional constraints take varied forms but are often expressed through racial, ethnic, religious, class, and other sociological institutional constructions.

Rawls therefore focuses his efforts on defining and creating just institutions after acknowledging that accidents of natural endowment and contingencies of social expedience create injustice from the beginning. He addresses this beginning with the creation of the original condition wherein each hypothetical society member stands behind a veil of ignorance, blind to the natural and social endowments that await them beyond the veil in real society. Rawls suggests just institutions would be formed by such individuals behind the veil of ignorance as

justice would be found in the agreements they made in such a state. For example, creating a society in which men are all powerful and women are completely subservient is unlikely to occur behind the veil of ignorance. Each veiled participant would realize they had a fifty percent chance of being all-powerful, but also a fifty percent chance of having no power. No rational individual behind the veil would take such a risk and therefore no such society would be formed.

But what society would be formed? To answer this question, Rawls takes a deontological approach emphasizing commitment to principles encoded into constitutions, institutions, laws, policies, and practices. Rawls argues that behind the veil of ignorance, in the original position, individuals would agree to certain principles that would then constrain and guide their future construction of social institutions and the laws and policies those institutions in turn would create. In order, the principle of equal liberty and the difference principle (Rawls, 2001, p. 42) states:

- *Each person has the same indefeasible claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all.*
- *Social and economic inequalities are to satisfy two conditions: first, they are to be attached to offices and positions open to all under conditions of fair equality of opportunity; and second, they are to be to the greatest benefit of the least advantaged members of society.*

These two principles address the two fundamental constraints fighting against a just society, that is, unequal liberties and unequal access to resources.

I suggest the idea of basic liberties is already engrained in American society although not necessarily always fully realized. That individuals are entitled to certain liberties such as those of association, religion, and conscience is already widely viewed and accepted. Note that Rawls does limit one's rights to basic liberties when those rights infringe on another's rights.

But Rawls does not allow the essential equal liberties to be impugned by financial factors. The order of these two principles is important: the second principle addresses financial concerns, while the first addresses essential liberties. Rawls is unequivocally stating that financial concerns are of secondary importance to essential liberties. Put another way, no one should be forced to give up their freedom of conscience, for example, in order to facilitate someone else's access to wealth.

To explain why this is a significant change in social justice theory, and to begin the explanation of the importance of the second principle, I need to take a brief detour into philosophic history. Classical utilitarianism suggests that people come together in societies to protect and promote their individual and mutual interests. Put more bluntly, utilitarianism seeks to maximize an individual's happiness, pleasure, or some other definition of "utility." In this view, social institutions are arranged to maximize the weight of the sum of the expectations of a relevant, representative man (Rawls, 1971, p. 161). By emphasizing the sum of benefits, society can easily become distorted. For example, some could accrue benefits at the expense of other's liberty, such as in the institution of American slavery. Even if basic liberties were not violated, the sum of the benefits might be accrued in a manner that directly benefits a few but leaves others destitute. For example, wealth increased tremendously during the American Gilded Age of the late 1800s. However, most of the wealth accrued to a relatively small percentage of people. By only looking at the overall sum of new wealth in late 1800s America, one might assume the increase to be just. However, the overall sum hides destitutions of the poor flocking to America's new urban centers. Likewise, a similar argument might be made regarding the Information Age or globalization's impact on wealth in modern America.

Some address the issue of wealth inequality by arguing for equality. In such a view, all would have the same. Rawls' difference principle takes a different approach by changing the definition from a sum to a spread of society's wealth. As the principle states, inequality is clearly tolerated and even acceptable. But, that inequality is only acceptable to the extent that the beneficiary of the extra wealth benefits the least well-off. By this definition, then, slavery is clearly unjust as the slave owner benefits at the expense of, rather than the benefit of, the slave. Turning to another example, one might look at Bill Gates' enormous wealth gained through the development and deployment of a new operating system that played a significant role in opening computing power to the masses. Computing power has served as a transformational disruption in virtually every aspect of life typically resulting in better service. Arguably then, Gates' massive fortune is just as the source of his wealth derived from improving life for even the world's least well-off.

Finally, Rawls sees the equal liberty and difference principles as critical to the provision and maintenance of the primary goods necessary for a just society. He originally (Rawls, 1971) defines primary goods as those goods that one would both want and find useful. He later (Rawls, 2001) re-defines primary goods more specifically as those things needed by individuals to be fully participating citizens in a just society. These primary goods might include: basic rights and liberties such as freedom of conscience, freedom of movement and choice against a background of diverse opportunities, powers and prerogatives of offices and responsibilities, income and wealth, and the social bases of self-respect — those aspects of institutions essential to citizens having a lively sense of their worth as persons and advancing their ends with self-confidence (Rawls, 2001, p. 58).

Generally speaking, these noble aspirations and goods would be hard to argue against. However, Rawls' theory may be insufficient regarding education. Macleod (2010) suggests that Rawls' theory hinges on individuals with fully functioning capacity; developing children are therefore by definition not in possession of a fully mature agency. Others note that the primary goods theory lacks specifics. Brighouse and Unterhalter (2010) argue that education fails to make the Rawlsian list of primary goods. Indeed, they argue that Rawls neglects family and child development, and hence education, generally throughout his work. But even in their modest critique of Rawls, they recognize that including education as a primary good is itself philosophically challenging, mostly because primary goods look at the institutional inputs an individual receives, not at the outputs produced. Children, as we know, are diverse, with differing abilities and social backgrounds. Ensuring each child realizes the Rawlsian primary goods might require unequal inputs, a possibility not truly addressed. Capability theorists, led by Sen and Nussbaum, suggest an alternative, more specific, and more practical social justice theory.

Building Justice: A Capabilities Approach

Following a warm and generous review of his friend and colleague John Rawls' social justice work, Sen cuts to the heart of the matter by suggesting Rawls work is seriously deficient. "Rawls focuses on primary goods, but, true justice may lie not just with the primary good itself, but people's ability to convert that primary good into a good living" (Sen, 2009, p. 65). In a simple example, Sen notes that all people need nutrition, but a pregnant woman needs more nutrition. In the Rawlsian universe, this simple reality might be ignored. The primary good of wealth even moderated by the difference principle might be insufficient for the pregnant woman to realize her nutritional needs, even though theoretically she is living in a just society. Sen suggests this as a serious deficiency in Rawls' theory. Alternatively, Sen proposes theory focusing on primary goods with an actual assessment of real individual freedoms and capabilities. For Sen, Rawls' arguments for a perfect society compares to acknowledging that Mount Everest is the highest peak. Mount Everest is the perfect mountain just as Rawls' society is perfectly just. However, knowing Mount Everest is the highest peak does nothing to help a climber assess the relative heights of Mounts Kilimanjaro and McKinley. For Sen, a climber should be able to make these assessments and actually make the climb.

Therefore, Sen argues for a "capabilities approach" to social justice. In capabilities, justice is measured by a person's "capability to do things he or she has reason to value" (Sen, 2009, p. 231). Whereas Rawls took a strictly deontological view, Sen takes a much more teleological approach where the capability approach focuses on human life and not just on detached objects of convenience. In the previously discussed argument between Arjuna and Krishna, Rawls would certainly pursue the principle of the fight and heartily engage in battle. Sen would approach the battle from the impact on the human lives — the battle might not occur at all despite the principles at stake. I say, "might," because the capability approach points to the inequalities in human existence, but does not on its own propose any specific formula for policy decisions. The approach only seeks to increase the actual capabilities individuals have.

Sen's use of an ancient Sanskrit epic to illustrate his point exposes another deficiency in Rawls' arguments, or at least an expanded perspective in Sen's. Sen takes a global perspective in his work, thus recognizing the diversity of the global human community. In his opening, Sen argues, "the task of advancing, not perfecting, both global democracy and global justice can be seen as eminently understandable ideas that can plausibly inspire and influence practical actions across borders" (2009, p. xiii). Because Rawls' approach focuses on ideal institutions, and because there is no effective one-world government, justice on a global scale must be advanced incrementally and through the improved lives of individuals (Sen, 2009, p. 401).

Of course, this is precisely what the Capability Approach proposes. Further, Sen's critique of the original position reflects the complications arising from placing people behind the veil in a diverse global society. Differing societies have different perceptions of justice, and the closed impartiality of the original position can exclude those who do not belong to the focal group. This criticism assumes the participants in Rawls original position share similar views of what justice is; in a diverse globalized society, it is likely some views will be unjustly ignored. In other words, they will experience exclusionary neglect in the original position exercise. Secondly, the make-up of the original position focus group itself lends itself to inclusionary incoherence. Again, in a diverse global world, the make-up of the original position focus group could vary with differing compositions created by differing representatives creating contradictory definitions of "justice." Finally, procedural parochialism acknowledges that the

original position participants may show partiality toward shared biases that may not be shared by a more diverse group. These biases are unlikely to produce a truly just outcome. To illustrate these points, Sen refers to a hypothetical example where the perpetrators of the September 11, 2001 attacks were tried according to Sharia Law. Would a just outcome be produced?

Sen's critique assumes that the original position is an actual rather than a hypothetical exercise. The fact that such an exercise is unlikely to occur in either the hypothetical or real sense forms a further limitation of the original position. Sen's critique accomplishes another purpose. In connecting the language and practice of theoretical justice to the demands of a diverse global society, Sen conjoins social justice and the realities of globalization. In doing this, Sen provides a social justice path, through the Capabilities Approach, that utilizes the dominant efficiency discourse of globalization.

To do so, Sen begins with a deontological position, defining his theory of comparative justice in two principles (Sen, 2009, p. 410). In the first, justice should be assessed based on social realizations, that is, what actually happens. Put another way, there is no justice unless there is an actual realization of a new capability for a real person or persons. While Rawls might be satisfied with an institution of a school being built in a formerly school-free area, Sen wants to see formerly illiterate girls actually learning to read before he declares justice is done. Further, justice should focus on the comparative issues of enhancements of justice. Returning to our schooling example, it is not necessary, although it is desirable, for all girls in the region to learn to read for justice to be done. Rather, there simply needs to be an increase in the new reading capacity compared to the old capacity for justice to be served. Hence, while Sen starts from a deontological position composed of two primary principles, the principles themselves are deeply teleological in that they focus on the application of justice in real people's real lives.

From this teleological deontology, Sen derives five concepts to guide his theory of comparative justice. First, an approach to justice can be both theoretically acceptable and usable in practice. Second, an approach to justice does not necessarily have to conform to the demands of a perfectly just society or the exact nature of just institutions; instead, an increase in the comparative capacity is sufficiently just. Therefore, Sen is not perfectionistic as is Rawls, but much more realistic. Third, an approach to justice can include the understanding that different reasonable and impartial judges could sensibly differ on the identification of a transcendental alternative. Fourth, the approach to justice can allow that an individual may not be fully resolved on one alternative to the exclusion of others. Put simply, there may be multiple paths to justice. This concept also inherently recognizes Sen's belief that people occupy multiple and not just one identity. Justice must recognize that one person, for example, can identify as a married, white, male, religious, mountain biking fanatic and realize that different applications of justice can be both just and unjust to the same individual due to these multiple identifications. Finally, the fifth concept grants that reason may have not yet reached the point where every problem can be perfectly solved. Indeed, Sen concedes, "We go as far as we can." (p. 401)

Sen's comparative justice journeyed far beyond its institutionally focused foundation. It is not hard to see why the United Nations and social justice-oriented organizations around the world like his focus centering on people, acknowledging diversity, and raising comparative capabilities. Yet, as Sen himself acknowledges, the theory itself remains incomplete. Wolff (2008) agrees with Sen's identification of justice as people's "capability to function" (p. 23) but notes that Sen refrains from listing what those functionings should be. Additionally, because of the very diversity both in and among humans, Sen's pluralistic view makes it very difficult to understand what equality means or how to measure various functionings against each other.

Nevertheless, Wolff does agree that Sen's theory goes a long way toward neutralizing the effect of sheer luck – such as one's birth order, social standing, class, race, intelligence, etc. – and would contribute to a more relational or social equality. Similarly, Pogge (2010) and Kelly (2010) also argue the capabilities approach is too diffuse. The very diversity the capabilities approach seeks to address makes ranking welfare levels among people extremely difficult if not impossible. In an argument reflective of Rawls equality principle, Pogge therefore argues that certain capabilities must be guaranteed equally. In a corollary argument also containing shades of Rawls' difference principle, Pogge suggests a certain threshold for certain capabilities must be maintained. But what might these capabilities be?

Building Justice: The Capabilities Approach Refined

Nussbaum (2011) seeks to answer the question of what capabilities should be created. Working from a teleological approach similar to Sen, she asks the fundamental question, "What is each person able to do and be?" (p. 18). From the starting point of taking each person as an end, she offers her addition to the capability approach following several concepts. This first concept differs fundamentally from Rawls who saw the primary goods as the end of justice rather than the person, but is still in line with Sen's thinking. Furthermore, Nussbaum specifically argues that taking each person as an end means rejecting the neo-liberal, profit-driven discourse dominating so much of our policy conversation. She suggests that profits should be a means to capability, not the end of capability. Nussbaum also seeks an increased focus on choice or freedom along with a pluralist view of capability achievements. For example, a pregnant woman needs more calories; hence, the measure of justice here would be the pregnant woman receiving enough, not necessarily equal to a nonpregnant woman, calories to capably bear her child. Entrenched injustice and inequality must be addressed. Finally, Nussbaum differs from both Rawls and Sen by taking the social justice theory debate directly into the realm of policy. In fact, Nussbaum ascribes an urgent task to government to create public policy that improves the lives of all people as defined by their capabilities.

Equity-focused leadership should develop Nussbaum's ten basic capabilities: life, bodily health, bodily integrity, imagination, emotions, practical reason, affiliation, other species, play, and control over one's environment. In choosing which of these ten capabilities to address, any individual policy should of course keep in mind that each person, and not a profit, is the end. Furthermore, the policy should promote "fertile functionings" or address "corrosive disadvantages" among the capabilities. Fertile functionings are those capabilities that tend to promote additional capabilities. For example, "play" might seem an unusual inclusion on a list of basic capabilities but it actually serves as a fertile functioning. Women who are completely dependent on their husbands financially often find themselves trapped in less-than-ideal or even abusive situations. Due to the need to care for children coupled with the duty to care for a husband and often extended family such as elderly parents, women sometimes do not have time for rest and rejuvenation that play brings. Hence, by creating the capability of play, a policy might simultaneously be addressing issues of finance, improving women's' emotional health through play, and protecting bodily health as play often involves healthy physical movement. Alternatively, addressing corrosive disadvantages would minimize the lack of a capability's negative impact on other capabilities.

Nussbaum also differs from both Rawls and Sen in specifically and pointedly addressing educational policy as a potential means to produce fertile functionings. Nussbaum argues that

education addresses existing power imbalances that create inequalities and other disadvantages. For example, as women become educated, they acquire greater capability for financial independence. This growing capability shifts power dynamics in the household as a domineering husband may lessen his grip in the face of the potential loss of his spouse. As this happens, household work distributions may become fairer thus leading to more play or leisure time for women. This is but one example that is not without controversy. Because of the fertile functioning effect that education has, Nussbaum argues governments should not allow choice in education but instead require all children to develop certain capabilities. The development of capabilities in more people justifies, in Nussbaum's view, the governmental intervention. Nussbaum concludes, "We are living in an era dominated by the profit motive and anxiety over national economic achievements. Economic growth, however, while a part of wise public policy, is just a part, and a mere instrument at that. It is people who matter ultimately; profits are only instrumental means to human lives." (p. 185)

Conclusion

Justice is neither easy nor simple due to the world's tremendous diversity and the differing starting points from which each individual begins. The inequities of these starting points are often reinforced through the social constructs in which the individual lives. Rawls' contributions of the original position and the difference principle provide highly idealistic principles upon which to base fairness minded institutions. Yet, the very deontological idealism of Rawls' proposals makes their practical application difficult, and may result in significant inequities and unfairness even in a theoretically just society. Sen and Nussbaum move to fill this void through a teleological approach emphasizing the development of human capabilities. Some capabilities, the fertile functionings, act as leverage points essential to further capability development. Regardless of which capability a social justice-minded leader chooses to develop, success is measured by an increase in capabilities regardless of how small.

Perhaps because of the challenging reality of vast disparity, little attention is paid to direct equality. Rawls provides an exception through his principle of equality but limits that equality to basic fundamental liberties. Regarding economics, Rawls' difference principle allows certain degrees of inequality as long as that inequality is fairly earned with the rich accruing only so much as they contribute to the least well-off in society. Likewise, Sen and Nussbaum take a more fairness than equality approach by recognizing that not all capabilities are equal and may not be developed at equal rates. Still, the attempt at creating capabilities resulting in improvements no matter how small forms the essential course of justice-minded action.

The CalAPA takes a deontological approach by demanding commitment to equity. The CalAPA also takes a teleological approach by defining certain capabilities — analyzing data, facilitating communities of practice, and coaching individual teachers — as essential capabilities to achieve equity goals. While the CalAPA therefore provides an institutionalized and effective starting point for future administrators to pursue societal equity, these same future leaders might also be well served by changing an increasingly diverse world through:
- Committing to Rawls' principle of equality in that no policy should deprive basic fundamental liberties.
- Committing to assessing policies and practices through the lens of Rawls' "original position" by asking how those "behind the veil" would view the policy or practice.

- Committing to assessing any proposed policy within the context of the "difference principle." Any just policy would allow inequity only to the extent that inequity benefits the least well-off within the context of equal opportunity for all.
- Committing to a comparative justice approach. The world is not perfect; no policy will make it so. But policy can incrementally improve the lives of real people. In other words, things can be better.
- Committing to developing capabilities, especially fertile functionings. Creating capabilities ensures that people are actually better off than they were before. Finding the fertile functionings broadens the policy's potential impact.

Practicing these five functionings might develop our individual and collective capability to exist in a more equitable, fair, and just world.

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From the Chalkboard to the Bank: Teaching Educational Leaders to be Effective Fundraisers

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The effective use of financial resources is critical for all educational institutions, especially those K-12 schools that rely on public funding for their main operating revenue. As public entities and state governments increasingly struggle to find the revenue necessary to operate prisons, fund Medicaid/Medicare, improve an aging infrastructure, support social welfare programs, and recover from the Great Recession, educational institutions are finding themselves directly competing with other public agencies for scarce resources. These factors resulted in 29 states reducing funding for public education (Evans, Schwab & Wagner, 2019; Leachman, Masterson, & Figueroa, 2017). In the face of fierce competition, educational leaders must learn how to effectively compete for scarce funds in order to provide the necessary resources that will allow their schools to flourish.

Traditionally, public educational institutions have been subsidized through a society's willingness to tax itself. Most states identify an appropriate personal or property tax rate that all individuals pay, and these funds are then allocated for commonly used services, such as providing free education to all children under a certain age; in most states, this provision is a constitutional requirement of the government.

Despite the long-standing tradition of funding education, public schools are often underfunded, especially given the wide range of students these schools attempt to educate. This underfunding leads to cutting and eliminating programs, partially funding other programs, and having to make difficult decisions about how to educate students. Additionally, it also forces public schools into educational fundraising and creating independent school or school district-wide foundations.

The fundraising process is not new to education, and higher education in particular has over 200 years of history aggressively seeking contributions to underwrite their activities, programs, and personnel. And yet, despite the growing need for K-12 schools to diversity their revenue streams, they have engaged in relatively few fundraising activities. Part of the reason for this lack of aggressive fundraising by K-12 schools is the lack of education about how to raise private funds by principals and superintendents.

The process of qualifying an individual to be a school leader is increasingly regulated, increasingly challenging, and has been historically debated for reform for 30 years (National Policy Board for Educational Administration, 1989). Much of the regulatory creation for school leaders has come about due to legal challenges and errors of the past, including concerns over child welfare, fiscal management problems, risk management, etc. Recent regulations placed on school leaders hinder their ability to creatively solve problems, resulting in a strong national movement to completely deregulate school leadership, allowing politicians, former military and business leaders, for example, to assume these leadership positions with little to no experience in education. Some of these individuals have been highly successful, and others not successful at all, but the common theme throughout the process of assuming a school or district leadership position is that there are minimum necessary skills that an individual must hold to be effective. The current discussion is framed around the skills necessary to garner private resources for schools, and the purpose for conducting this study is to identify and compare methods for teaching K-12 leaders about how to be effective fundraisers.

Background of the Study

Fundraising has become prominent in all sectors of education and has taken on visibility not realized in previous decades. Part of this growth has been due in part to the rising costs of energy and technology, in part due to increased competition for and regulation of public funds, and in part due to the growing competitive environment of K-12 education. There is, however, a legacy of fundraising in K-12 education, with sports, activities, and clubs all having a long history of asking for parental and local business support for field trips, programs, and the "extras" associated with student organizations. The current and coming period of fundraising, however, is more directly related to school operations and the direct cost associated with schools.

K-12 schools have steadily increased their reliance on external benefactors to support their programs. This support has ranged from individual donors providing their endowments towards schools to pay teachers' bonuses, to creating endowed positions so as to support school

leaders. The result of this type of giving is largely realized in the talent a school can recruit and retain, and this, in turn, has direct bearing on student achievement and the perceptions of the community as to how well a school performs.

Educational leadership and administration programs have been criticized in recent years, along with the entire teacher preparation process. Increasingly, calls for alternative approaches to school leadership have been framed around questions of whether or not there is a distinct set of skills or a knowledge base that informs educational management. Critics, for example, highlight the strong leadership skills in industry and the military, and suggest that these leadership skills are (or should be) transferable directly to school administration.

The Education Commission of the States (2018) created a rubric on educational leadership position requirements and regulations, indicating that virtually every state requires at least a master's degree to hold a principal position and graduate credit hours beyond the masters to hold a superintendent position. States such as Florida do note that, "School districts have the authority to appoint persons to the position of school principal who do not hold educator certification." States such as Connecticut, Georgia, and Alaska also allow for temporary waivers or grant the local school board the authority to appoint a school leader as they deem appropriate.

Of the states that reported requiring a certain degree area (typically educational 'leadership' or 'administration'), most required a number of graduate credit hours to have been earned, although most did not stipulate degree area content. Degree content is typically focused on the Educational Leadership (ISLLC (The Interstate School Leaders Licensure Consortium) standards that were re-designed and issued in 2014 and approved in 2015. These standards tend to focus on the operational elements of leading a school vision and mission, instructional capacity, curriculum and assessment, operations and management, equity, etc.), but do not include any specific knowledge standards on resource improvement.

Several ISLLC Standards do allude to skills often identified in fundraising, such as Standard 5D: "Ensures that each student has an abundance of academic and social support," (Council of Chief State School Officers, 2014, p. 18), 7C: "Builds and sustains productive relationships with families and caregivers" (p. 19), and 8J: "Acts as a steward of public funds (p. 19).

Davis (2010) concluded from his analysis of state requirements that the approach to administrative licensure has largely been one of assuring "minimal professional competence" (p. 9). Furthermore, he concluded that there was no unifying or clear rationale for the requirements for becoming a school leader, and that policies for licensure in all states "generally were not directly aligned with well-developed theoretical or conceptual frameworks for leadership development or evaluation, nor clearly aligned with standards for administrative practice" (p. 7).

The confounding result for schools, their leaders, states, and students, is that administrative personnel are trained in a wide variety of areas in which there is national agreement, but that these standards may indeed neglect key areas of importance to the contemporary school leader, such as fundraising. As schools and their districts find fundraising an increasingly important topic and skill, there must be some exploration as to how and where school leaders are expected to learn about fundraising, providing an impetus for the current study.

Findings from the study will be critically important to both school leaders and the schools that they serve; more importantly, effective fundraising skills can directly and

immediately improve the educational environment for students. Resources garnered through effective fundraising can improve the physical environment and human capital that can improve the success of the education a school can provide.

Research Methods

The sample for this study included 300 educational administration or educational leadership program faculty who had responsibility for graduate doctoral programs that prepared senior level school administrators at either the principal or superintendent level. All faculty were identified online from institutional websites, which were randomly selected by institution, including all the Association of Public and Land-grant Universities (APLU) and the American Association of State Colleges and Universities (AASCU) institutions using the SPSS sampler. Only full-time faculty members were selected for inclusion in the study, and the sample ultimately included 144 different institutions from across the United States.

The research team developed a three-part survey instrument based on the literature on effective fundraisers and fundraising skills (Dove, 2001; Rowland, 1977; Sargeant & Shang, 2019; Tempel, Seiler, & Aldrich, 2011). The survey was pilot-tested with an expert faculty panel and modified to clarify questions. The survey was administered in the spring of 2018 using an online survey. The first section of the survey included a listing of 15 skills important to fundraising ability and six fundraising strategies. Survey participants were asked to rate their agreement that each item was very unimportant (1) to very important (5) to school leaders to engage in public education fundraising. The second section included 12 strategies or methods to teaching fundraising skills, and participants were asked to rate their strong disagreement (1) to strong agreement (5) that each would be an effective way to teach fundraising ability. The third section included 10 'areas' where fundraising skills could be learned, and requested that survey participants rate their agreement that each would be an effective place to learn them. The definition of area was considered to be both a physical location as well as a provider, and this list of 10 was developed based on a review of where fundraising is and has been taught.

Due to the low initial response to the survey, two subsequent email administrations of the instrument were distributed to the sample of 300. A histogram of responses did not reveal any response bias based on timing of survey completion.

Findings

The first section of the survey included a listing of skills important to fundraising ability, and survey participants were asked to rate each as very unimportant (1) progressing to very important (5). As shown in Table 1 (see Appendix), 13 of the 15 skills were rated between important and very important (4.21 and 4.88). The most important skills agreed to were problem solving ($\bar{x} = 4.88$), interpersonal relationship skills ($\bar{x} = 4.86$), and verbal communication skills ($\bar{x} = 4.78$). The lowest level of agreement was expressed on the skills of multitasking ($\bar{x} = 3.99$) and attention to detail ($\bar{x} = 3.87$). A Within-group Analysis of Variance was conducted on these 15 items, identifying significant differences among the mean scores ($f = 10.38$; $p<.004$), noting differences between the skills of attention to detail and multitasking and the skills of customer service, writing, strategic planning, taking initiative, verbal communication, interpersonal communication skills, and problem solving.

Also presented in Table 1 are the agreement levels of the importance of six fundraising skills. The highest mean scores for the importance of fundraising strategies were major gifts ($\bar{x}$ = 4.81), donor research ($\bar{x}$ = 4.68), and annual giving ($\bar{x}$ = 4.63), and the strategies with the lowest level of importance mean was capital campaign work ($\bar{x}$ = 4.16).

The second section of the survey included 12 teaching strategies that could be used to help school leaders learn to be effective or successful fundraisers. The respondents agreed most strongly that using case studies ($\bar{x}$ = 4.68) would be the most effective, followed by workshop, job or role shadowing ($\bar{x}$ = 4.50), and field experiences ($\bar{x}$ = 4.41). The least agreement was for education through lectures ($\bar{x}$ = 4.01), however, there were no significant differences identified in the mean scores within the techniques identified (p<.6382).

The third section of the survey included a listing of 10 'locations' or ways that school leaders could potentially learn about fundraising skills and strategies. The mean scores for these 10 items were all above 4.0, indicating that as a group, they perceived "agreement" to "strong agreement" that these would be effective ways of learning. The most agreed upon locations for learning were specific off-site training, other professional association sponsored opportunities ($\bar{x}$ = 4.88) followed by a single topic graduate class (such as a graduate seminar in school fundraising $\bar{x}$ = 4.87), and embedded in a graduate class ($\bar{x}$ = 4.77). The least agreed upon location for learning how to be a fundraiser was through a self-directed learning activity ($\bar{x}$ = 4.29), and again, no significant differences were identified among the mean scores (p<.3422).

Discussion

The survey responses in this exploratory study provide some insights into how school leaders think about the fundraising process and what they need to be effective, or perhaps more effective, in their work. Three of the top six agreed upon skills for effective fundraising were interpersonal communication skills, verbal communication skills, and writing skills, suggesting that leaders perceive a need to understand better how to communicate the importance of their mission, vision, or calling. Where to learn about this was strongly agreed to be in the graduate classroom, either in a dedicated class on fundraising or at least with a module in a different class. This type of skill development might fit in well, for example, with a course on finance or leadership. Respondents also agreed strongly that a professional association offered fundraising program would be an effective location to learn about the activity. Such programs are currently offered by The Fund Raising School, the Association of Fund Raising Professionals, and, among others, the Council for the Advancement and Support of Education.

With such high levels of agreement across all items, these findings collectively reinforce the idea that school leaders perceive that fundraising is indeed an important part of their professional job, and that they need to be proficient in this role. The findings do not, however, suggest whether or not the current skill development that has been called on for reform is resulting in a high level of knowledge or performance. Most likely, these results suggest that financial concerns are a major issue that school leaders face, and that the generation of additional revenue is something that they must learn to pursue. Additionally, the high agreement levels for fundraising strategies suggests that these leaders see a real importance related to major gifts and the background research necessary to assure these types of gifts.

Further research into fundraising in public education is needed in several areas. First, research projects that create a base line of practices and reliance on external funds would help establish the importance of the topic and could possibly help raise awareness of the school

funding situation across states. Second, research into which practices are in use, are effective, and their impact on student learning could also help raise awareness and create a stronger understanding of the need for diversified funding streams in education. Third, studying private giving models to public education could help increase the demonstration of the need for training and professional development for fundraising skills. And fourth, the impact of a principal or superintendent suddenly engaged in extensive fundraising on a school or on staff should be examined in relation to organizational behaviors, impact, and effectiveness. Learning from their colleagues in higher education, public schools may well find that a leader highly engaged in raising funds can have a very significant impact on office roles and responsibilities.

The success of public education is predicated on the adequate resourcing of the schools and teachers who are charged with this responsibility. If public entities either choose not to resource these schools, or are unable to, then school leaders must begin to aggressively solve the problem through their own direction. Fundraising as an activity can require a significant amount of time, but it can also provide key resources to empower aspiring school leaders to succeed.

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Appendix

Tables

Table 1
Mean Agreement Levels of Importance of Fundraising Skills to Teach

Fundraising Skill	Perceived Importance	SD
Skills		
Problem Solving	4.88	.710
Interpersonal	4.86	.500
Verbal Communication	4.78	.619
Taking Initiative	4.55	.428
Strategic Planning	4.54	.323
Writing	4.52	.640
Customer service	4.49	.628
Organizational	4.44	.823
Teamwork	4.38	.402
Persuasive	4.34	.628
Networking	4.30	1.000
Creativity	4.26	.989
Leadership	4.21	1.009
Multitasking	3.99	.911
Attention to detail	3.87	1.111
Strategies		
Major Gifts	4.81	.522
Donor Research	4.68	.573
Annual Giving	4.63	.435
Special Gifts	4.22	.600
Planned Giving	4.20	.589
Capital Campaign work	4.16	.850

Table 2
Effective Teaching of Fundraising

	Mean	SD
Case studies	4.68	.283
Workshops	4.50	.439
Job/role shadowing	4.41	.633
Field experiences	4.37	.747
Seminars	4.24	.719
Experiential learning	4.23	.839
Self-Paced modules	4.22	.328
Role playing	4.20	.490
Simulations	4.20	.675

	4.18	.500
Webinars	4.18	.500
In-basket exercises	4.03	.889
Lectures	4.01	.899

Table 3

Preferred Location of Learning Fundraising Skills and Strategies

Location/Provider	Mean	SD
Specific off-site training, other professional association sponsored	4.88	.465
Single topic graduate class	4.87	.434
Embedded in graduate class	4.77	.628
Education professional association meeting/conference	4.73	.477
Specific training, state sponsored	4.69	.586
Specific training, district sponsored	4.62	.600
Professional association membership	4.45	.437
Consultant-based training	4.44	.501
Personal reading	4.30	.549
Self-directed learning activity	4.29	.555

High Impact Study Skills
for Diverse PreK-12 Subgroups

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As educators, we know students from all sections of the population who are bright, but do not do well academically (Grade Power Learning, 2018). This is particularly true with students from underrepresented populations or whose parents are not college graduates. Significant reasons for this are because they do not know how to study effectively, how to get organized to study, how to complete assignments beyond the simplest level, and how to comprehend and retain information (Kern, 2008). This occurs across all racial and economic lines. Thus, the problem addressed in this study/paper has been to identify successful study skills that would be effective with diverse subgroups.

The objectives of this study were to:

- *Determine study skills that had been used successfully by current teachers in the field across various ages and subgroups; and*
- *Increase student learning across subgroups through the identification of successful study skills techniques to help close the achievement gap.*

This project sought study skills that were successful as identified by actual teachers in the field. Teachers in the Northeast Texas arena were queried via blind survey research to identify techniques they had utilized successfully with their varying subgroups. Those results have been tabulated, analyzed, and presented.

This project consists of two groups of Northeast Texas teachers using the same survey (Appendix), but delivered by different methods. The first was an open-ended survey presented by principals at ten different campuses (3 elementary, 4 middle schools, and 3 high schools), with superintendent permission, face-to-face in faculty meetings. The same survey was subsequently sent electronically to ten additional campuses (3 elementary, 4 middle schools, and 3 high schools) via Survey Monkey with principal and superintendent permission. Responses were also returned via Survey Monkey. The responses from both surveys were collected and analyzed. Since the survey, as shown in Appendix A, was the same, the only difference was method of delivery.

Keywords*: achievement gap, study skills*

An achievement gap exists between various subpopulations. While there are different reasons this may occur, divergent levels of intelligence are not necessarily a primary cause (Grade Power Learning, 2018). Some students come to school knowing how to study better than others. Lack of this knowledge is particularly true for children of color, from impoverished, or with various handicaps (Kern, 2008). Schools, traditionally, have done little in the way of a formalized program to teach study skills at the elementary, middle, or high school levels.

This study was undertaken with practicing teachers using survey research to determine the best study skills they have successfully used with multiple subgroups. The results were gathered, analyzed, and categorized.

Literature Review

The literature is rich with examples of study skills for different population sets. The following review will address each subgroup targeted in this study.

Study Skills Effective with Most Students:

Study skills that are successful with the dominant population can also be applied, adapted, and targeted towards various subgroups (Entress and Wagner, 2014). Success in school requires studying outside of class. It also requires teachers to do more than just present the information. An effective teacher must be able to present information in such a way that the students experience success. In conjunction with that, teachers must teach study skills and encourage students to practice the skills at home. (Entress and Wagner 2014).

Entress and Wagner (2014) understand that students who already possess excellent note-taking and organizational skills, already surpass those students who do not. They assert that re-reading notes simply will not adequately prepare all students for mastery of their learning objectives. Students should be taught how to study and take notes. Additionally, they should be taught meta-cognitive skills. Entress and Wagner identified several techniques to assist students move information into long-term memory. Cramming for a test the night before is not the solution. Therefore, they suggest that:

- Students must actively engage with the information they are reviewing;
- Student attention must be sustained; and
- Students must frequently self-assess.

By actively engaging, students should use multiple senses such as writing or talking about the information they are trying to learn. Creating and playing games that require processing information is effective. To sustain attention, they further suggest adding a study partner or pictures to the games. The pictures should be student-generated to cause students to connect and have ownership with the material in a way that their brains understand. A way to self-assess throughout the studying process is to take breaks and informally test themselves. This cuts the information into smaller, more manageable pieces. Students can, thus, see what they have mastered and what they still need to learn (Entress and Wagner 2014).

A recommended study tool is to have students create note cards with new vocabulary. Entress and Wagner (2014) suggest that students write the word, the definition, draw a picture, and use the word in a sentence on the back of the card. Teachers can boost the students' learning by modeling how this process works. Another study tool is the utilization of a crib sheet, used to prepare for an exam and covers significant material. Students are told to condense,

consolidate, then rewrite their targeted information on a small space such as an index card. The most important information should be on the crib sheet, and it should be limited to one page (Entress and Wagner, 2014).

In addition to explaining how to study, explain how not to study. Re-reading notes a few times the night before a test is ineffective. Students do not understand the deeper concepts when they cram for a test, nor can they recall every detail (Entress and Wagner, 2014).

Study Skills Effective with Diverse/Underrepresented Populations:

The need for a language-rich environment is critical. The rise of Pre-K programs in the United States over the past few decades shows the tremendous effort to get children ready for school. The majority of the Pre-K programs are designed to serve disadvantaged students and English Language Learners (Brown, C., 2013). Policymakers are trying to close the achievement gap by serving these groups. Children living in poverty are, thus, at a disadvantage starting out.

Study Skills Effective with African-American Students

Though high academic expectations are the standard that all educators have for their students, many students are encumbered with an array of challenges that obstruct their paths to successfully reaching those high academic and social benchmarks. What is more, multiple researchers note that African-American learners in public schools encounter additional challenges including cultural insensitivity from teachers and others (Ladson-Billings, 2006; Henfield & Washington, 2012), racially-biased assessments (Ford & Helms, 2012), and disproportionate disciplinary actions (Arcia, 2007; McElderry & Cheng, 2014; Diamand & Gomez, 1997). African American students have traditionally faced numerous barriers to academic success. These include poverty, discrimination, and low-performing schools. These types of barriers can place them at increased risk for school failure and/or special education placement (Gardner & Mayes, 2013). To promote success among African American students, educational leaders must be armed with a comprehensive understanding of all the factors that elevate or hinder students' success.

Though it is imperative to recognize and understand the barriers these learners encounter in education, it is perhaps more important for teachers and administrators to understand how to lead these students to success. Brown, K. (2008) found that one effective strategy teachers can use in the classroom to increase the achievement of African-American learners involves incorporating cultural artifacts; students can use their heritage to relate to these. Another high-yield instructional practice to use with African American learners is the use of collaborative learning strategies (Sullo & Thomson Gale, 2008). As minority students tend to primarily interact with other minority students of their own ethnicity, a subgroup is created. That group of students can become isolated from the mainstream culture and begin to feel isolated themselves. However, the use of collaborative learning strategies can aid students in interacting with students of various backgrounds and ethnicities to create a more inclusive, welcoming learning environment (Sullo & Thomason Gale, 2008).

Study Skills Effective with English Language Learners (ELA)

A student whose primary language is not English will struggle academically until he or she masters the English language. Students learning English as a Second Language (ESL) need many strategies to help them learn the target language. Paige & Magpuri-Lavell (2014) understand that ESL students will not be able to keep up academically with their peers until the language gap is closed. They report one strategy used by middle and secondary teachers is whole-class choral reading. This strategy allows all students to read aloud from the same text, at the same time, in unison with the teacher. Students of all levels benefit from this reading strategy because it is a "deliberate practice" (Paige & Magpuri-Lavell, 2014).

Another strategy they report is paired, or buddy, reading. This strategy allows the teacher the opportunity to pair an ESL student with a peer who is a fluent reader. This technique has been used by teachers for many years and is quite effective (Paige & Magpuri-Lavell, 2014). A third strategy Paige & Magpuri-Lavell (2014) recommend for ESL students is syllabic analysis. This technique allows students to decode a word they do not know by identifying the syllables. Thus, breaking words down, or chunking them, helps readers look at the parts of the word that they may already know, such as the meaning of a root word. The researchers have also identified morphemic analysis as an effective strategy for ESL learners. This strategy allows students to identify meaning in prefixes and suffixes to help build word meaning. This assists with both reading comprehension and fluency, as students are able to identify the smaller pieces of words.

Another study by Varatharajoo, Asmawi & Abedalaziz (2015) focused on morphemic knowledge. The researchers found that to acquire vocabulary in any language students must be able to build meaning or they will not be able to understand a complete sentence. Therefore, students must have explicit vocabulary instruction. One way for students to build a larger vocabulary is with morphological knowledge. Students learn the meaning of morphemes so they can build the word into something meaningful. Once the meaning of a morpheme is learned, the student can construct multiple words with more complex meanings.

A study by Milnes and Cheng (2008) in Canada found almost 46% of immigrants spoke neither English nor French as a first language. In their study, they learned that teachers made adjustments or modifications for ESL students. They interpreted test answers and allowed extra time for students to complete work. They also used incentives for even small increments of progress and rewarded the students with praise and other reinforcements.

Study Skills Effective with Special Needs Students

Cahill (2008) found that a special needs student in middle school did better when allowed to have some control over developing an organizational system. Cahill (2008) also found that strategies based on self-regulated learning allow students to choose their own learning goals, as well as develop and execute action plans related to these goals. Students must know what the performance expectations are when they begin a task. Providing a rubric and showing examples helps special needs students understand what is expected of them.

Another strategy to help a special needs student could be to have students list the steps required to reach the goal, whatever the goal may be (Cahill, 2008). Students can be taught metacognitive skills and self-evaluate as they work towards their goals. Safran (2002) suggests that students with special needs, especially those who have Asperger's syndrome, should closely follow a routine and be allowed to sit in a quiet space if possible. Memory games using self-

made flash cards are also good for study purposes with struggling students. This strategy helps students learn new vocabulary by matching the words with the definitions to further develop their concentration and memory skills (Entress & Wagner 2014).

Study Skills Effective with Gifted and Talented Students:

With 6 – 10% of Pre-K-12 students identified as gifted learners, teachers will undoubtedly have some of these students in their classrooms. Kelemen (2015) emphasized the need for teachers to attend professional development to augment the necessary skills to teach the gifted student.

Teachers will need to find creative ways to keep gifted and talented students engaged in the learning process. Teaching a gifted student in a regular classroom can, therefore, be a challenge. Adams (2015) has five suggestions to meet the needs of gifted learners:

- Build community in the classroom so the students feel like they belong.
- Assess often, and be ready for enrichment.
- To the maximum amount possible, let gifted and talented students take charge of their own learning.
- Honor students' interests. Allow them to explore and investigate their interests independently.
- Involve parents. Encourage them to work with their child and to get involved with the school. Teachers can provide learning extensions to the lesson to keep the student engaged both on campus and at home. Parents can reinforce the working relationship by providing information about the child which can assist the teacher.

Study Skills Effective with Early Childhood Learners

According to the Albert Shanker Institute (2009), advances in cognitive science show that very young children are capable of much more academically than was previously imagined. The impact of a Pre-K program for a young child cannot be overstated. The Institute acknowledges that a quality Pre-K experience helps to create the educational foundation for the kinds of knowledge, skills, and behaviors that children will be expected to master in school and in life. They further suggest curriculum should include opportunities for active language instruction, including challenging "read aloud," daily reading and discussions of books, new concepts, and new vocabulary. A language-rich environment is crucial for the Pre-K learner. The Institute explains: when children are exposed to adults who talk with them regularly about a broad variety of subjects, they become better at speaking and comprehension in general (2009). Thus, early childhood children, as well as all other children, benefit from hearing the spoken word as a form of communication in multiple formats.

Alphabet knowledge is also crucial for early childhood learners. It is the foundation for learning to read and write (Jones et al. 2013). The need for vocabulary instruction cannot be emphasized enough. Young children are adept at learning new words when exposed. They acquire these words from various sources such as read aloud storybooks, television, listening to others speak, and actual conversations of their own (Christ and Wang 2010). The key is exposure.

Study Skills Effective with Elementary and Intermediate Students

According to Ozsoy, Memis, & Temur (2009), study skills are usually defined as a student's ability to manage time and other resources to complete an academic task successfully. Elementary and intermediate school students often do not possess the skills to be able to determine how much time they will need to complete a specific assignment, task, or project. Students who do have metacognitive abilities are able to regulate their learning. Most students this age do not inherently know how to study or create good study habits for themselves. They need guidance (Ozsoy et al. 2009).

Schunk (2004) also reported that elementary aged students should be taught how to study. These skills can be embedded in the daily classroom routines. Lee et al. (2008) found that strategic note-taking is an effective learning tool for both general education students and special needs students. In their study, Lee et al. (2008) examined students with different levels of background knowledge to see how effective the students' note-taking strategies were. They found that even the students who had prior knowledge benefitted from prompts from the teacher about the specific important notes to take during a class discussion. Overall, they found children seemed to have great potential in applying note taking learning strategies when shown how.

Students remember information better if they are taking full or partial notes or if they are given an outline of pertinent material where a set of notes is handed to them. Sometimes key words can be omitted and students must fill in those blanks, either from paying attention to the teacher, or looking up the answers. This prevents their short-term memories from being overloaded. This is based on cognitive load theory (Sweller and Chandler 1991). Ozsoy et al. (2009) concluded in their research that metacognition is not only important for achievement, but also for study habits and attitudes of students. These habits should also carry over into other aspects of students' lives.

Study Skills Effective with Middle School Students

Students in the middle school years are an often-misunderstood group. An underlying assumption in middle school is that students are old enough to juggle multiple assignments, plan and organize projects, and regulate their time and behavior (Boller, 2008). Cognitively, these students are still developing. Teachers need to be reminded that students are often lacking organizational skills. They may need both direct instruction, guided practice, and support. Modeling how to organize is a good strategy for teachers to use in helping middle school students (Boller, 2008). They can better understand what to do themselves if they see it being done.

A student may seem unmotivated, when actually they don't know where to begin (Boller, 2008). So, they are doing nothing. They are overwhelmed. Many teachers give oral instructions, which may not be the best learning style for all students. Juggling oral language can be a struggle for some students. Providing visual cues, modeling, repeating and reinforcing instructions may eliminate misunderstandings. Teachers can help by breaking down the instructions into smaller tasks and helping the students achieve one task at a time (Boller 2008).

Boller (2008) further explains how to teach students to plan. First, make a list of the materials needed, then talk to others about the project. Ask students to talk through a time line and estimate how long they think it will take them to complete each segment of the project. Then help students develop the project, task, or assignment timeline with benchmarks along the

way. The timeline should provide a clear outline of what needs to be done and when. Teaching the process can be as important as teaching the content (Boller 2008).

McTigue & Liew (2011) explained that motivation for reading and learning, and students' self-efficacy in school often declines in adolescence. A student's self-efficacy is directly tied to their belief that they are capable of achieving that which they set out to achieve. Middle-schoolers undergo major biological, cognitive and social-emotional changes during early adolescence. It is important for researchers and practitioners to be aware of such developmental changes in students' self-concepts and self-beliefs and, thus, react accordingly (Wigfield, et al. 2006). With this in mind, it is critical that teachers directly teach organizational and study skills. Creating a safe classroom environment and providing corrective feedback in a timely manner can also improve a student's self-efficacy (McTigue & Liew 2011).

At Waikiki School, in Hawaii, the focus is to teach metacognition thinking processes directly to students (Matsuoka 2007). Thinking processes are as important as the learning of the content material. Students construct meaning by participating in engaging activities. They also should be encouraged to ask questions, explore problems, and make thoughtful decisions (Matsuoka 2007).

Study Skills Effective with High School Students

In addition to teaching study and organizational skills at the secondary level, teachers must also help their students develop their metacognitive thinking through direct instruction (Schofield 2012). Students often fail to see the relevance that solid study skills will have as they advance to their next academic level, so this must be explained to them (Smith, Teske, & Gossmeyer 2000). According to Smith et al (2000) the student who knows and uses proper organizational skills can often succeed where others fail.

Another way to increase the successful utilization of study skills is through learning/thinking logs (Schofield 2012). This forces students to actively engage in thinking processes. They must be taught to think about their thinking, or, in other words, reflect on what they do and do not know. This will increase their awareness and, thus, improve their learning. As students begin to use their metacognitive processes, they will automatically be able to better evaluate their own learning (Schofield, 2012). Some ways teachers can help students develop their metacognitive processes are by using the following strategies:
- Plan and describe the objective explicitly;
- State the cognitive skills necessary to complete the task;
- Clarify the learning goals;
- Make links to prior learning; and
- Rhetorical questioning (Schofield 2012).

Methodology

Set A

Permission was received from superintendents from ten Northeast Texas independent school districts for surveys (Appendix A) to be passed out by the principals at faculty meetings for teachers to complete. Surveyed were 3 elementary schools, 4 middle/intermediate schools, and 3 high schools. Teachers were asked to submit their personal input on study skills they had used and found to be effective with the subgroups described above. Not all categories fit all teachers. For example, early childhood teachers did not respond to the questions for high school teachers. These, and others like them, were simply left blank. Completed surveys were returned to the principals, and subsequently to the researcher, after the faculty meetings. Results were tabulated for the most commonly occurring strategies and themes.

Set B

With superintendent permission, the same surveys were sent by Survey Monkey to ten additional Northeast Texas independent school districts to determine same or different results. Again, surveys were sent to teachers of 3 elementary, 4 middle, and 3 high schools. The only distinction between the two sets of data was method of delivery: face-to-face vs. electronic.

Results

Strategies and ideas from the two sets matched almost identically regardless of how the teachers were surveyed. These results showed that teachers favored the following methodologies across all subgroups. They could be modified/adapted to effective for all students.

High Impact Strategies Revealed
Small Group Study Sessions

Repeated short study sessions with breaks were more effective than cramming, which was found not to be effective. The brain retains better from spread out vs massed studying. Studying with a friend by asking each other questions or utilizing flash cards over the materials addressed are examples of strategies that were found effective. Students could also teach each other the material. There is no better way to learn material than to break it into small pieces and teach it.

Practice Tests

Finding or developing practice tests for students to use to study and train from were found effective. Creating potential questions that could be on a real test. With older students, let them create the questions. Have the students answer the questions in writing, allowing them to use their notes. This will help them frame responses before they are actually assessed.

Learning Styles

Utilizing different student learning strengths whether they be auditory, kinesthetic, visual, or a combination thereof, asks that teachers analyze each student to determine what their individual strengths actually are. Does each child accomplish more, or learn better, by listening to a teacher teach, by doing something hands-on, or through visual learning? Finding each student's individual strength and use it to their advantage is effective.

Study Spaces

If a student is most successful studying in a quiet place, find one. If they learn better with auditory stimulation, let them use head phones to create the environment they need. If they need to walk around, allow them to in a way that is not invasive or distracting to other students. Listening to taped or similar YouTube lessons can enrich some students. Others may find them distracting. Use what works per student. The Study Space should include everything the student requires including a computer or headphones, pens, pencils, highlighters, magnifying glasses, manipulatives, or anything else needed for the student to be successful.

Collaborative Learning

Collaborative learning, or any of its modified forms, was recommended by the teachers. It breaks learning down where each student has their own role and responsibility. Collaborative learning is particularly helpful for slow or struggling students because they are working in a group environment. Students can learn from their peers. In this way, students can work from their individual strengths, benefit from others, and be successful.

Project Based Learning

Project Based Learning is recommended for students who have a specific learning interest or who prefer to work alone or in a small group. PBL must be structured and highly planned. Guidelines, objectives, checklists, benchmarks and timelines must be developed and utilized. Problem Based Learning can be a large undertaking, but for many it is a successful work and study tool.

Comprehension Skills

Comprehension skills can be difficult to teach. Teachers say students should work for shorter periods of time and take "mini-breaks," then repeating the process. For many students, there is only so much new learning that they can absorb at one time. The "mini-breaks" can serve as a "reset" button to clear their minds so they can focus again.

Goal Setting, Timelines, and Calendars

Teachers suggested teaching students to set learning goals with steps for accomplishing them and time lines. Reward them when they master something early or on time. Productive utilization of time management is a key to successful teaching and learning.

Miscellaneous Other Study Skills Related Recommendations

- Study skill one-on-one instruction with an instructor either before, during, or after school;
- Tutorials with a parent or other external person;
- Study games. Teachers suggested checking the Internet for those that are content and age appropriate.
- Teach mnemonics and acronyms;
- Be as hands-on as possible;
- Utilize positive reinforcement in abundance;
- Do what works for your students even if others think it is odd;
- Teach students to believe in themselves;
- Believe in yourself as a teacher; Don't let the rat race beat you down.

Conclusions

This study of what actual teachers perceive as effective study skills for diverse groups of students utilized two different methods. The only distinction was method of delivery. Tabulations showed both groups of teachers recommending the same strategies and themes of study skills and potential delivery models. The conclusions do merit consideration for working with diverse students from Pre-K through high school.

Recommendations

It is recommended that this study be replicated on a larger scale with the intent of continued improvement of study skills methods and delivery for greater student learning success.

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Appendix
High Impact Student Study Survey

From your teaching experience, what are:

1. Study skills that have been particularly effective with most students:
2. Study skills that have been effective with special needs students:
3. Study skills that have been effective with African American students:
4. Study skills that have been effective with any other diverse/under-represented populations:
5. Study skills that have been effective with gifted and talented or particularly bright students:
6. Study skills that have been effective with English Language Learners:
7. Study skills that have been effective with early childhood learners:
8. Study skills that have been effective with elementary or intermediate school students:
9. Study skills you have utilized, or seen utilized, that have been effective with middle school students:
10. Study skills that have been effective with high school students:

Thank you for participating in our study!

Why All Leadership Faculty Should Initiate A Reform of Quantitative Methods Courses

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It is time to reform the quantitative methods courses in leadership programs – typically, these are statistics courses with arcane statistics textbooks. There is growing evidence that these "rigorous" scientific methods actually mislead practice because the vast majority of practices found to be "effective" or "evidence-based" using these methods do not work in schools – including those validated by the federal What Works Clearinghouse. Fortunately, there are other quantitative methods that are more intuitive, and more accessible to leaders, leadership students, and leadership faculty – methods that are more relevant for improving practice and identifying "evidence-based" practices that are likely to actually improve schools. However, those who control the content of quantitative methods courses tend to be those with the most technical expertise in the traditional methods and will oppose any methodological alternatives as being "non-rigorous." The newer quantitative methods will not be emphasized in EdD and Masters programs until all leadership faculty exert greater voice on the content of such courses. A first step is to stop calling quantitative methods courses "Statistics" courses. They should be "Applied Quantitative Methods" courses. This non-technical article (a) outlines the problems with traditional statistics, (b) highlights some of the newer and simpler quantitative methods that are more relevant for improving schools, and (c) describes an alternative textbook as a key resource for transforming the quantitative methods course.

This non-technical article is intended for the vast majority of leadership faculty who have little to no background in statistics. It is intended for those whose expertise is in educational leadership and management – i.e., the vast majority of leadership faculty. This article is a call to arms for the majority of faculty to wrest control of leadership quantitative methods courses away from those steeped in traditional statistical analysis and thereby make the courses more relevant to actually improving schools and solving problems of practice.

Quantitative methods courses are usually listed as a statistics course and emphasize the esoteric traditional methods and analyses used by psychologists in laboratory research and medical researchers to test the effects of an individual medicine. Those who question whether these methods are relevant to school leaders are usually cowed when informed that these statistical methods represent rigorous science, and that questioning their use is an indication of an academically weak program. While these methods are indeed rigorous for the purposes for which they were intended – largely PhD forms of basic research – these methods are not valid or useful for informing decisions in complex organizations such as schools and hospitals. In fact, there is growing evidence that the results from the traditional statistical methods have been misdirecting educational practice – particularly results identifying evidence-based practices. Indeed, it will be shown that the more "rigorous" the statistical analyses, and the more prestigious the journals in which the evidence of an effective practice is published, the *less* likely the findings are valid – e.g., the less likely the practice will in fact improve practice. Reliance on traditional statistical methods is not rigorous science but a misuse of science.

The traditional statistics course is the last remaining vestige of PhD programs imposed on EdD programs. Other courses in leadership graduate programs have been updated to meet the needs of leaders seeking to improve their organizations and solve problems of practice. While quantitative methods courses are essential, such courses need to recognize that traditional statistical methodology is but a subset of quantitative methods – and that there are newer quantitative methods that are far more useful towards helping leaders improve their organizations, what should be the major focus of EdD quantitative methods courses.

However, those with PhDs and/or an extensive background in statistics tend to control the content of the quantitative methods courses in leadership programs – and they will not give up this power without a fight. They simply will not accept that their methods, which are appropriate for PhD programs, are generally not useful for solving real world problems in schools. It is time for the rest of us who are experienced in the actual practices of improving educational organizations to impose our will and (a) demand reform of the quantitative methods course, and (b) use our expertise to have a major voice in the course content to ensure that more relevant forms of quantitative methods are taught.

This call to arms is not written by someone who is against quantitative research. Quite the contrary. I am a math major who has taught statistics in several universities. I have presented twice at international conferences put on by the American Statistical Association, and may be the first educator to have been published in its flagship journal, *The American Statistician*, read by statisticians across the disciplines (Pogrow, 2019a). The ideas contained herein are based on that recent article. These ideas provide a basis for those with a non-technical background to understand:
- How traditional statistical practices mislead practice,
- How to make the case for reform, and

- What the key characteristics of an alternative quantitative course would be that is geared to the realities of educational practice.

Finally, a resource is presented to support this grassroots reform. It is an alternative quantitative methods textbook that presents quantitative analysis from the perspective of leaders' needs. This resource can be used to inform the reform effort and as the primary text for an authentic quantitative methods course.

Evidence for the Need to Reform Quantitative Methods Courses

Quantitative methods have traditionally been viewed as the province of mathematically sophisticated methods and individuals. Educators have:
- Accepted that esoteric mathematical and procedural complexity is a necessary condition for conducting rigorous science;
- Accepted the published findings of effective practices based on such research as gospel;
- Allowed those with the most expertise in statistics and research methodology to determine the content of EdD quantitative methods courses; and
- Assumed that the quantitative methods course in an EdD and a Masters leadership program should be a course in statistics.

However, statistics courses tend to overwhelm students and convince them that quantitative analysis is beyond them. Statistics courses create resentment against the use of quantitative analysis and convince most EdD students to conduct a qualitative dissertation. This backlash is at odds with the reality that educational leadership practice is becoming ever more quantitative. Increasingly, leaders are expected to use quantitative research evidence as the basis for making decisions on how to best improve their schools.

Of course, simply because content is difficult to grasp is not in and of itself an argument for minimizing its emphasis. In this case, emphasizing traditional statistics is inappropriate because traditional statistical methodology does not generally produce useful or valid evidence for leadership decision-making. Quite the opposite! Current sophisticated statistical methods tend to produce highly misleading evidence and conclusions as to whether interventions are likely to improve schools under real-world conditions – especially research published in the top research journals. Traditional statistical methodology was largely used by psychologists to produce evidence in lab settings where it is possible to control the potential intervening variables.

To understand the problem in the current forms of statistical methodology promoted by statisticians and education psychologists, consider the following:

> There's a famous joke about a dairy farmer who, hoping to increase milk production, seeks the help of a theoretical physicist at the local university. After carefully studying the problem, the physicist tells the farmer, "I have a solution, but it only works if we assume that cows are spheres".

Cows are not spheres and schools are not static, stable environments where you can control anything for more than a few minutes. Much of the statistical and methodological complexity is an effort to simulate such control – but in the end the rigorous traditional methodology conducts analyses about a hypothetical mathematical world. Stated more simply, gold standard experimental methodology, typically referred to as Randomized Controlled Trials (RCT), with

all of its methodological and statistical wizardry cannot describe the reality of the myriad social and programmatic interactions within complex organizations such as schools or hospitals.

Even worse, the statistical criteria being used to interpret whether the numbers generated by statistical analysis such as the F-test, the t-test, regression, etc., indicate that an improvement or relationship is significant – i.e., statistical significance – grossly overestimates the importance of findings. Therefore findings of "significant benefits," or "significant positive relationships" that are used as the basis for concluding that a practice is evidence-based and should be adopted by leaders, actually mislead the field. Pogrow (2017; 2018; 2019a) summarizes this and other problems, such as self-serving statistical adjustments, in using traditional statistics to guide practice. This misdirection and overstatement of effects in the highest quality and most influential research is not only a problem in education but across the disciplines.

There is a growing body of scholarship that is now actively criticizing the use of traditional statistical methods for guiding clinical practice in a variety of fields – including psychology itself. Scholars recently started discovering that the vast majority of the most influential published laboratory research in a variety of fields cannot be replicated in subsequent experiments in the lab and/or were not reflecting what clinicians were seeing in practice. If evidence of "evidence-based practice" cannot be replicated in the lab, whatever benefits were identified in the research are not going to replicate in schools.

In other words, traditional statistical methods and procedures make it easy to legitimately produce high quality research that claims to have found a new discovery where there is none – and that is infecting all of science. The replication crisis has gotten to be so pronounced that the American Statistical Association has just called for research to stop relying on statistical significance ($p<.05$) (Schirm, Lazar, & Wasserman, 2019). Pogrow (2019a) has also called for eliminating the use of small benefits (effect sizes) to indicate program effectiveness.

There is also a major replication crisis in education. In 2010 the U.S. Department of Education funded the dissemination of 67 interventions based on research findings of positive impacts on students' achievement – research findings that had been validated by the scientifically rigorous criteria employed by the federal What Works Clearinghouse (WWC). The 2018 final evaluation of the impact of these interventions (Bouley, et al., 2018) was that of the 67 interventions with rigorous statistical evidence of effectiveness:

- 58 of the 67 produced no statistically significant increase in student achievement. However, given the inadequacy of statistical significance, this author has developed an alternative statistical measure of practical benefit, which indicates whether any increases would be sufficiently large to be noticeable and of value (Pogrow, 2019a). Further analysis by this author indicated that…
- 63 of the 67 produced no noticeable benefit in student achievement.

Nor were these poor results the fault of practitioners. The evaluation concluded that these poor results occurred despite quality implementation by the schools.

This comprehensive evaluation means that (a) any leader that adopted one of these evidence-based interventions would have made a terrible mistake in the overwhelming majority of cases, and (b) the evidence provided by traditional statistical methodology generally does not replicate in practice. This failure of traditional forms of evidence is particularly problematic in an era where federal legislation such as ESAA are requiring schools to implement evidence-based practice.

Probably the most consequential misdirection of practice from rigorous research evidence was the widespread adoption nationally of the Success for All reading reform intervention for high-poverty schools over a 25-year period. The adoption of this intervention was based on research evidence in top research journals demonstrating its success. The What Works Clearinghouse characterized this research as demonstrating the strongest evidence of success, and the widespread use of Success for All was the research community's shining example of the value of research. However, research by Pogrow (2002) and Boulay, et al. (2018) found that this expensive program had never actually been effective in practice and that a surprising number of sites had quickly decided to drop it. Districts that adopted it wasted hundreds of millions of dollars and shortchanged the education of cohorts of their most needy students.

Furthermore, while traditionalists consider RCT research to be the "most rigorous" form of research, it only produces differences/improvements that are too tiny to be of practical benefit—and these benefits are dwarfed by the statistical errors used to produce the result. Lortie-Forgeus and Inglis (2019) found that among all the 141 large-scale RCTs aimed at improving educational outcomes in grades K-12 funded by the UK and the U.S. National Center for Educational Evaluation and Regional Assistance, the average effect size (ES) was a miniscule .06. Considering that an ES of .2 indicates a difference that is "difficult to detect" (Cohen, 1988), .06 means that RCT research, which is the most expensive, technical, and time consuming form of research, produces results that are less than one-third of "difficult to detect." Such findings are useless for practice in complex organizations such as schools and even in the medical field.

However, statisticians routinely consider such trivial results to be important. For example, the key research claiming to show that charter schools are better for Black students than traditional public schools did so on the basis of a difference that was a tenth of "difficult to detect." The What Works Clearinghouse also considers trivial effects to indicate that something is working – i.e., effective. In other words, researchers now routinely make claims of discoveries of effectiveness using statistical criteria that are too trivial to have any practical importance and therefore mislead practice. If practitioners and policy makers knew what the numbers actually represented, they would not, and should not, consider using, advocating, funding, or endorsing the vast majority of evidence-based practices that "rigorous" research has deemed to be effective.

Despite this growing body of evidence that "rigorous" sophisticated advanced traditional statistical methodology has largely failed to provide useful findings for improving practice and has misdirected policy and decision-making, those who generally teach and/or decide what the nature of quantitative methods courses defend these methods as the only form of rigorous science. However, these methods are *not* scientifically rigorous for applied research in improving complex organizations such as schools and should no longer monopolize leadership quantitative methods courses.

Where Do We Go From Here?

Quantitative methods are essential for improving practice. It is now clear that quantitative methods courses in leadership programs need more than a tweak. They need a reconceptualization that builds upon the traditions of management and decision-making theory and perspectives. Fortunately, there are new methods for generating and using quantitative

evidence that are more appropriate for improving practice in complex organizations such as schools and even in medicine. A good model is hospitals' efforts to improve the delivery of health care. Like schools, hospitals are also complex organizations that seek to improve the outcomes for their clients. These newer methods are generally referred to as improvement science.

One major success of improvement science in the medical field is obstetrics' reduction of infant mortality. Obstetrics has made more progress in saving lives over the past 50 years than any other branch of medicine (Gawande, 2007). However obstetrics never used controlled experiments or sophisticated statistics. It used checklists and pragmatic rapid prototyping of alternative approaches, as well as quick analysis of results using simple descriptive statistics and rapid sharing of results across networks of obstetrics departments.

Such success validates the use of the more modern quantitative methods of improvement science for improving complex organizations, such as schools, using the most basic statistics and very pragmatic, intuitive analyses. The goal is to quickly discover innovative approaches that produce improvements that are so clearly noticeable and consistent with goals that there is little reason to conduct any statistical analysis beyond basic descriptive statistics, such as averages and standard deviations. Human common sense and leadership judgment can determine what "clearly noticeable" means much better than a finding of $p<.01$**. Indeed, it can be argued that if a leader needs a statistician to discern whether quantitative evaluation results indicate that an intervention is effective — it probably isn't.

These newer methods can be considered to be a new epistemology of applied quantitative research. They are more scientifically rigorous because when the findings are replicated they provide more valid and useful observations about the real world that lead to better decisions by leaders on how to improve their schools. These newer quantitative methods have an impressive track record of improving clinical practice in complex organizations and in time-sensitive complex processes in a variety of disciplines — even in medicine.

Pogrow (2018, 2019a,b) has incorporated these newer ideas for quantitative research and has developed the statistical criterion of practical benefit to replace statistical significance and practical significance. The criterion of practical benefit includes a number of simple measures for leaders to use to determine whether the findings of specific published research are likely to benefit their schools in noticeable ways. He also shows how leaders can apply these newer quantitative research methods to their schools' data to design and test improvement strategies, and how to use those methods to develop useful EdD dissertations (and Masters theses).

Reforming Leadership Quantitative Methods Courses

Leadership quantitative methods courses need to be very different from what currently exists. Such courses need to shift from complex traditional statistical methodology to the more intuitive methods of improvement science and quantitative reasoning that have proven to be more valuable in improving complex organizations.

Unfortunately, the perspectives and needs of statisticians/researchers seeking to preserve their traditions and beliefs, and those of leaders seeking to produce noticeable improvement, are now at odds. Several such examples of the latter divergence previously discussed are leaders' need for noticeable benefits and for evidence of replications in organizations like theirs, instead of single studies seeking to establish causation that exaggerate

the actual benefits found in the research. As a result, reforming quantitative methods courses should *not* start from the perspective of statistics or educational psychology, but from the perspective of how leaders – those successful in using data to make major improvements in their organizations – employ quantitative methods.

If EdD programs are to prepare leaders who are better able to use quantitative evidence to improve their schools and solve problems of practice, it is critical to stop viewing the quantitative methods courses as the province of just those with highly technical statistical skills. All faculty need to work together to develop a more intuitive link between the newer, less technical, quantitative methods and the improvement of practice as a scientific endeavor. The techniques need to be ones that focus on schools as they actually are, not as spherical cows. The quantitative skills that need to be taught include how to:

- Use basic descriptive stats to mine datasets at the local, state, and federal levels to discover and precisely define inequalities and gaps, and progress;
- Use design thinking/improvement science to develop innovative solutions to try to address real problems of practice, and set up procedures to continuously review the performance of such solutions and to modify as needed;
- Develop measures and dashboards to track implementation and performance of innovative practice, and develop ways to share and disseminate such data in real time across the organization;
- Critique published research evidence in terms of its practical benefit; and
- Compare a given school's/district's performance to ones that are similar demographically.

In other words, it is now more important to know how to define, create, manage, and use data across one's organization than to know advanced statistics and statistical methodology, or how to use SPSS.

The above skills should not just be relegated to the quantitative methods course. Any course that discusses evidence-based practices should incorporate some of these ideas. Indeed, all faculty should reexamine their conclusions as to whether the practices they consider to be evidence-based actually are. This would make quantitative methods an integral part of an EdD program's ongoing focus on solving problems of practice.

Rethinking quantitative methods in such a fashion requires collaboration among all faculty in an EdD program. It requires the non-statisticians on the faculty to use their instincts from what they know about practice to take a strong role in re-designing the quantitative methods course and integrating the key ideas of improvement science, innovation design, and continuous improvement.

A starting point for reforming quantitative methods courses would be to cease calling them statistics courses and stop using statistics textbooks. An alternative quantitative methods textbook that is designed around the perspective and needs of leaders has been developed—Authentic Quantitative Analysis for Leadership Decision-Making and EdD Dissertations, (Pogrow, 2018). This textbook is published by the International Council of Professors of Educational Leadership (ICPEL). (To order go to lulu.com, and search "Pogrow".) A Masters level version is under development.

As this is written, approximately 12 EdD programs around the country have reformed their quantitative methods course around the use of this text. In each case it has been a political struggle to be allowed to do so — and such efforts do not always succeed. However, it is a battle worth fighting. For ammunition to make the case for reform, all leadership faculty can

download the following two of my open-source recent articles in top journals that summarize the problems with traditional PhD methods. Faculty can then discuss the ideas among themselves and share the articles with key college and university leaders: https://doi.org/10.14507/epaa.25.2517, and https://doi.org/10.1080/00031305.2018.1549101 The articles are written in an easy-to-understand language. Faculty can also contact me for support at *spogrow@sfsu.edu*

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Statistics Course Improvement for School Administrator Preparation

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Accompanied by increasing demands on school administrator preparation and rapid development of computer technology, educational statistics courses are exposed to unprecedented pressures for changing both curriculum content and computing platforms. In this article, the intended curriculum is reviewed according to data analysis expectations from state and national guidelines. Past recommendations on statistics instruction are examined to justify the need for quantitative research skills in school administrator preparation. The curriculum implementation is further investigated to reflect a fundamental revision of statistics content by the American Statistical Association. The article ends with an overview of the cutting-edge software development in R that is likely to reshape the future data processing, text analytics, and graphical display for school administrators.

Keywords: statistics curriculum, R computing, data analysis, text analytics

School administrators typically start their careers in teaching before completing a master's or doctoral degree in educational administration. During the process, Polnick and Edmonson (2005) asserted, "statistics courses as they are usually taught in graduate schools of education are not designed for the school principal" (p. 40). Thus, an important question has been raised of the need for statistical training to prepare educational administrators. The debate on the value of statistical courses is further extended to the traditional rivalry of quantitative and qualitative studies because some stakeholders prefer to read success stories over numeric findings in administrative reports (Hiller, DeChurch, Murase, & Doty, 2011).

Nonetheless, it is important to recognize that no subject, including statistical knowledge, remains stagnant. Prior to entering the 21st century, researchers already projected that "public agencies will need administrators who have sound backgrounds in quantitative data analysis and in computer usage" (Hy, Waugh, & Nelson, 1987, p. 139).

The Intended Curriculum of Statistical Training

According to the International Bureau of Education (2019), intended curriculum is indicated by a set of "formal documents which specify what the relevant national education authorities and society expect" (p. 1). In California, the Commission on Teacher Credentialing has developed the California Administrator Performance Assessment (CalAPA) to measure students' mastery of California Administrator Performance Expectations. With the credential requirements, educational administration programs are designed, in part, to help students pass CalAPA. The course setting, under the CalAPA model, provides an overarching conceptual framework to progressively refine the administrative candidate's thinking and decision-making skills.

At the beginning step, Leadership Cycle 1 of CalAPA calls for "Analyzing Data to Inform School Improvement and Promote Equity" (California Commission on Teacher Credentialing, 2019, p. 1). While school improvement is often contrasted to a baseline from the past, promoting equity may span across different demographic and school variables. Hence, systematic training is needed to investigate education factors from multilevel data in both time and space dimensions.

Beyond the state level, the National Policy Board of Educational Administration (NBPEA) insists that principals should be taught processes for experimenting and learning from real world data to meet challenges of the work environment. More explicitly, Polnick and Edmonson (2005) observed that "An essential expectation elaborated in the NPBEA training guidelines was the need for practicing principals to develop basic statistics and data analysis skills that will assist them in their day-to-day operations of the school" (p. 40).

While CalAPA and NPBEA addressed the expectation of effective leadership programs at state and national levels, Bernerth (2018) attached more emphasis on data gathering and analysis at the local level because "organizational decisions that have significant personal and financial implications are often made as a result of empirical research" (p. 133). For instance, Los Angeles Unified School District decided to show data on student improvement each year on how individual schools are helping students progress academically (Burke, 2019). A thorough analysis of the learning outcome involves a proper control of confounding variables, such as (1) race, age, gender, and primary language identity for students, (2) subject competency and years of instruction for teachers, and (3) funding resources and average class sizes in various schools. Without basic statistical knowledge to disentangle these variables, administrative

decisions could be misguided to fit an ambiguous situation that precluded examination of these key characteristics across student, teacher, and school levels.

Besides the primary data analyses, school administrators may benefit from literature review to borrow the wheel from others. Although literature review typically relies on document reading, reflection and qualitative research, statistical training may play an indispensable role in reporting the result aggregation. For example, meta-analysis is a widespread statistical method for combining research outcomes from multiple studies. On December 20, 2019, an online search of the California State University libraries showed "gender difference" in the title of 29,909 books, articles, and reports. If a reviewer can use 10 words to summarize each item, the literature description may take over 600 pages, making the information nearly impossible to synopsize through qualitative inquires. However, meta-analysis simplifies the literature summary into an effect size across a massive number of studies (Kugler, Reif, Kaschner, & Brodbeck, 2018). "When the treatment effect (or effect size) is consistent from one study to the next, meta-analysis can be used to identify this common effect" (Elsayir, 2015, p. 630). More recently, effect size computing is supported by online calculators (Lenhard & Lenhard, 2016).

Due to advancement in statistical computing, quantitative findings have become more readily available in the literature. The concept of data has become more inclusive, as Yoshikawa, Weisner, Kalil, and Way (2013) maintained that "The world is not inherently qualitative or quantitative; it is the act of human representation through numbers or non-numeric signifiers like words that make aspects of the scientific enterprise qualitative or quantitative" (p. 4). Hence, intentional depreciation of research methods, such as the ones from statistics courses, will inevitably result in the impediment of inquiry outcomes along the line of paradigm division.

In summary, the examination of intended curriculum for educational administrator preparation, per guidelines of CalAPA and NBPEA, does not support exclusion of statistical training in the graduate program. The need of qualitative and quantitative methods depends on the nature of research questions. Rather than tweaking a question to fit a convenient method, and thus, exclude statistics applications, school leaders should be equipped with well-rounded tools for choosing or creating pertinent methods to handle practical questions. By definition, "Statistics is the science of making decisions by collecting, analyzing and making inferences from data" (Stats, 2019, p. 1).

Reality of the Implemented Statistical Course Offerings

Despite the consensus in the intended curriculum to include statistical training for school administrator preparation, statistics is often taught by educational statisticians, rather than someone in educational administration. The intent is to prepare principals to effectively analyze and report their findings to various stakeholders (Creighton, 2001; Holcomb, 2004).

To date, no attempt has been made in the curriculum setting to resolve the competition for more instructional time among different educator preparation programs. As Polnick and Edmonson (2005) reported, "While the NPBEA standards require principals to look at statistics and data analysis, very little training on how to gather and analyze data to make informed decisions is provided in the training manual or in many preparation programs" (p. 40). Even if a real dataset is included from a school, teacher candidates may place more interest in analyzing student performance at the class level while principal candidates show more interests in school

variables. To reflect the specialty in educational administration, it has been suggested that "principals should be taught processes for experimenting and learning from real world data to meet the challenges of the work environment" (Polnick & Edmonson, 2005, p. 39).

However, data analysis skills seem inadequate because "too few school leaders have had the opportunity to acquire in their graduate work or have seen [data analysis] modeled in their own experiences" (Holcomb, 2004, p. 27). With a purpose of improving statistical course offerings, McNamara and Thompson (1996) proposed seven guidelines:

(1) Emphasizing data analysis (Statistics is a set of methods used to analyze real-world data, which allows practitioners to focus on producing accurate results to inform school improvement);

(2) Using real world data (Basic statistics courses should be taught as an integral part of the principal preparation program using real-world data that principals encounter in problem-solving and decision-making tasks in their job performance);

(3) Focusing on descriptive statistics (Principals typically use data on all students to solve pressing problems and to make decisions for their current academic year);

(4) Using accurate descriptions (The previous three properties needed to accurately describe a univariate distribution including the measure of center, measure of spread, and the shape of the distribution);

(5) Learning exploratory data (Viewing data using open-ended assumptions reveals truth about random fluctuations, error and other confusion often encountered in school data);

(6) Using graphic displays (This guideline emphasizes the importance of using data graphics in all aspects of real-world data analysis); and

(7) Reporting outliers (This guideline emphasizes why a principal should learn to analyze and report outliers).

While these guidelines are well-intentioned to increase the practical value of statistics training, Points 1 and 2 are not mutually exclusive, particularly on the duplication of emphasis in learning opportunities for real-world data analyses. The outlier identification in Point 7 is also a byproduct from examining the measure of spread in Point 4. Likewise, using graphic displays in Point 6 happens quite frequently in portraying probability distributions, but it can also occur to qualitative data, such as word cloud plots in non-statistical contexts (e.g., Jayashankar & Sridaran, 2017), because of its relevancy to statistical result presentation.

With the focus of statistical training on descriptive statistics in Point 3, school administrators might have difficulty generalizing their findings beyond a local context, which downplays the importance of statistical inference for result dissemination. In this regard, one may borrow arguments from qualitative studies to claim case similarities for result relevancy in other schools. But random fluctuations, measurement errors, and confounding factors often impact education data and undermine the similarity assertion for Point 5. As Norman (2017) pointed out, "Qualitative researchers in our midst might well be feeling a bit justifiably smug at this point. After all, it is an axiom of their discipline that observations don't generalize; every observation is so influenced by contextual details that replication is bound to fail" (p. 1052). One may wonder why a particular school report should even be read if it has nothing to do with others in different schools.

Furthermore, Point 5 stresses description of a univariate distribution as if there is no need for analyzing relations among multiple variables. Point 3 also delimits the focus of decision-making in the current academic year, which hinders expansion of the result interpretation for visionary leaders in the time dimension. Altogether, the seven guidelines

might help simplify content for statistics instruction, but they are unlikely to support preparation of professional school leadership for well-rounded decision making at various times and/or in different settings.

Given the shortcomings of these guidelines, content reduction should not be aimlessly implemented in statistics courses. More consideration should be given to resolve the persistent issue that school leaders can not conduct effective data analyses after completing their programs in educational administration (Holcomb, 2004). Bradshaw and Phillips (2002) proposed adjustment, instead of reduction, of the course content in statistics. Polnick and Edmonson (2005) examined the current course structure, and complained that too little "time is devoted to survey methods, estimation techniques, exploratory data analysis, and statistical graphs for reporting the findings of practical inquiries, which are the essential statistics and data-analysis skills principals need to be successful on the job" (p. 41). These discussions primarily focus on supplying data analysis tools in statistics classes.

From a demand perspective, the need for real-world data analyses is grounded on the structure of an education system in which classes are nested in schools and schools are nested in school districts. Consequently, quantitative results from the hierarchical system involves disaggregation of school data at multiple levels. In particular, Bernhardt (2013) describes four layers of data disaggregation:

Layer 1. How many students are there? Male vs. female/Limited English Proficiency (LEP) vs. non-LEP ethnicities/Lunch codes.

Layer 2. How have the demographics changed over time? Increases vs. decreases in categorical variables.

Layer 3. What percentage of students are gifted, and are they equally distributed among genders and ethnicities?

Layer 4. How has the enrollment of LEP students entering the building changed over the years? Do students with higher attendance get better grades?

While data from Layer 1 can be subjected to contingency table analyses of discrete variables, Layer 2 involves continuous variables, such as time, in statistical reporting. Hence, so-called "real-world needs" vary according to school administrators' responsibility at a particular layer. Similarly, education leaders at Layers 3 and 4 should be trained at a more advanced level because they are required to analyze data distributions in multiple dimensions (Layer 3) and/or model the stochastic process for multiple variables (i.e., LEP, attendance, and grades in Layer 4).

In addition, although gender, ethnicity, giftedness and LEP status can be classified as categorical variables on a nominal scale, lunch codes relate to family socioeconomic status that is typically represented on a ordinal scale. Student performance, as indicated by a grade-point average, could be on an interval scale. To project changes over future years and estimate relations among different variables, data analyses involve both parametric and non-parametric statistical methods. With proper approaches in the data gathering, school administrators are not only needed to describe the data features, but also required to estimate the variation of empirical findings in statistical inference-gathering, school administrators are not only needed to describe the data features, but also required to estimate the variation of empirical findings in statistical inference.

Because not all schools are of the same size, the tasks of data analysis also depend on the environmental settings. In a small school, descriptive statistics could be used more often when the data are gathered across the entire population. In large school districts, school

administrators might choose to draw a random sample to represent the entire population, and thus, inferential statistics should be used instead. Since school leaders may experience job transitions, learning different statistical methods is an effective way to strengthen their well-rounded leadership capacity to handle change. Alternatively, partial endorsement of narrowly-focused statistics content might result in insufficient school administrator preparation for the real job market.

In summary, no piecemeal approach should be taken to fragmentize statistical training in education. Built on the axiom that the whole could be larger than the sum of its parts, it is more desirable to include both descriptive or inferential statistics across the parametric and non-parametric domains. The shared statistical training for teacher and principal preparation may offer additional opportunities to facilitate data triangulation from different perspectives. In a book "Real World Research," Robson (2002) considers data triangulation as an important strategy for strengthening report validity, credibility, and reliability.

Adaptations to Changes of Inferential Statistics from the Latest Subject Reform

Since the 1990s, school administration has been influenced by several federal education initiatives, such as Goals 2000, No Child Left Behind, and Race to the Top (Klein, 2018). In contrast, the content of statistics course has been relatively stable. Heston and King (2017) noted that "The meaning and use of statistical significance as originally defined by RA Fisher, Jerzy Neyman and Egon Pearson has undergone little change in the almost 100 years since originally proposed" (p. 113). For the findings of rejecting a null hypothesis, statistical significance is usually based on a p value less than 0.05, which traps the date-based reasoning into binary thinking. Kennerly (2016) complained, "It's true that researchers typically use statistical formulas to calculate a '95% confidence interval' — or, as they say in the jargon of statistics, '$p < 0.05$' — but this isn't really a scientifically-derived standard" (p. 1). In most textbooks, statistical inferences are still based on p values for probabilistic inference.

This stagnancy is about to change. On behalf of The American Statistician journal, Wasserstein and Lazar (2016) acknowledged that "Underpinning many published scientific conclusions is the concept of 'statistical significance,' typically assessed with an index called the p-value. While the p-value can be a useful statistical measure, it is commonly misused and misinterpreted" (p. 131). Consequently, Wasserstein, Schirm, and Lazar (2019) cautioned that the phrase "statistically significant" has become all but "meaningless." Their recommendation is to abandon its use entirely! Similar arguments and proposals have been made in the journal *Nature* to "retire statistical significance" (Amrhein, Greenland, & McShane, 2019). Furthermore, McShane, Gal, Gelman, Robert, and Tacket (2019) urged to drop the null hypothesis testing paradigm "for research, publication, and discovery in biomedical and social sciences" (p. 235).

These proposed changes may lead to exclusion of confidence interval estimation in statistics courses. If a value specified by the null hypothesis is outside a 95% confidence interval, then the null hypothesis is automatically rejected at a=0.05. In *The American Statistician*, Amrhein, Trafimow, and Greenland (2019) argued that words like "significance," "p-values" and "confidence" with interval estimates may mislead users into overconfident claims. Hence, the criticism has been extended to both point and interval estimates of inferential statistics.

With the desertion of statistical significance, Johnson (2019) worried that "abandoning evidence-driven standards for these judgments will make it even more difficult to design experiments, much less assess their outcomes" (p. 2). Ahuja (2019) also reported that John Ioannidis of Stanford University expressed reservation against abolishing statistical significance, and defended it as a "convenient obstacle to unfounded claims." Without it, he warned, "Irrefutable nonsense would rule" (Ahuja, 2019, p. 1). Deborah Mayo, a philosopher of science at Virginia Tech, further suggested that, "Nature ought to invite somebody to bring out the weakness and dangers of some of these recommendations" (Harris, 2019, p. 3). She cautioned that "Banning the word 'significance' may well free researchers from being held accountable when they downplay negative results" (Harris, 2019, p. 3) and "We should be very wary of giving up on something that allows us to hold researchers accountable" (see Harris, 2019, p. 4).

Goodman (2019) addressed the question "Why Is Getting Rid of P-Values So Hard?" based on the need of considerable social change in academic institutions to diminish the impact of statistical significance on journal publication, grant funding and faculty promotion. To smooth the process, some statisticians believe that p values should be allowed in quantitative research reports (McShane, Gal, Gelman, Robert, & Tackett, 2019). With the prominent voices in statistics rejecting the call to discontinue the term "statistical significance," the ASA (2016) recommends that statistics should support "understanding of the phenomenon under study, interpretation of results in context [and] ... No single index should substitute for scientific reasoning" (p. 132).

This ASA-pushed change offers two historic opportunities for strengthening statistics courses in education programs. First, ASA (2016) agrees that "a p-value without context or other evidence provides limited information" (p. 132), and thus, revision of statistics courses can be proposed to include more real world examples for justification of results at the school level. Secondly, ASA urges thoughtful research that "looks ahead to prospective outcomes in the context of theory and previous research" (Wasserstein, Schirm & Lazar, 2019, p. 4), which allows collaboration between statistics and qualitative research courses to expand student competence in analyzing big data that embrace the mixture of both numeric and text information.

In summary, the wisdom of changing inferential statistics is still delimited to incorporating uncertainty, quantifying it, and discussing it in a research context. Prior to a complete settlement of the dust, the ASA editors provide a bullet point list of their five don'ts (Wasserstein, Schirm, & Lazar, 2019) that can be relevant to renovating statistical training in school administrator preparation:

- Don't base your conclusions solely on whether an association or effect was found to be "statistically significant."
- Don't believe that an association or effect exists just because it was statistically significant.
- Don't believe that an association or effect is absent just because it was not statistically significant.
- Don't believe that your p-value gives the probability that chance alone produced the observed association or effect or the probability that your test hypothesis is true.
- Don't conclude anything about scientific or practical importance based on statistical significance (or lack thereof).

It should be noted that none for the five don'ts were mentioned by Holcomb (2004) or McNamara and Thompson (1996) for improving statistical training for school administrator preparation in the past. Norman (2017) asserted that "As anyone who has engaged in the culture wars between qualitative and quantitative researchers will attest, the debate between the two groups are unlikely to resolve anytime soon" (p. 1053). However, the demand for description of theoretical context and previous research, as advocated by ASA (see Wasserstein, Schirm, & Lazar, 2019), has built a bridge for articulating qualitative studies.

Albert Einstein once wrote on a blackboard, "Not everything that counts can be counted, and not everything that can be counted counts" (see Baker & Doyle, 2010, p. 5). Thus, statistics courses ought to support both data analyses and text analytics.

In retrospect, dividing quantitative and qualitative research in education, has been evolving for decades (Datta, 1992), and so has been the need for school administrator preparation in statistics (see Holcomb, 2004; McNamara & Thompson, 1996).

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Reports from the Field

Shifting Administrator Leadership Practices Through Individualized Coaching

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This report shows the impact that a two-year, coaching based, job-embedded administrator credentialing program is having on the leadership development of new administrators. The Clear Administrative Services Credential (CASC) program is centered on a conceptual framework founded on six professional learning standards combined with real life professional learning contexts, coaching conversations, professional development, and reflection. CASC participants have reported a high level of satisfaction and leadership development as a result of their inclusion in the program. CASC is provided at no charge to participants demonstrating their district's commitment to investing in and growing their own future leaders.

In July 2015, the new clear administrative services credential requirements changed for administrators in California. The new requirements shifted to a two-year induction process focused on job-embedded, real-life learning, combined with coach-based professional development (CTC, 2016). The induction experience includes an annual minimum of 60 and a maximum of 90 clock hours of professional learning centered on coaching, reflection, professional development, and assessment. Induction is anchored on six professional learning standards that describe critical areas of leadership that support and guide administrators into sustainable, effective practice (CTC, 2014). The shift places a heavy emphasis on individualized coaching (40 of the 60 hours) with the goal of developing leadership competency. In response to the new induction requirements, a large urban school district (District) established the Clear Administrative Services Credential (CASC) program. CASC seeks to spur much needed systemic change throughout the district's schools by providing professional development for administrators, and coaching them to think systemically and act strategically to empower leadership teams to impact instructional quality and student achievement.

We looked at: 1) how CASC implements the coaching portion of the induction program, 2) participant self-reported perceptions of how CASC coaching impacts their leadership development, and 3) observations and ratings of coaching competencies. Coaching is at the heart of this program and is the most expensive portion of induction. Most administrator credentialing programs rely on retired administrators to fill the demand for coaches. A participant can expect to pay between $7,000-$10,000 for the two-year program at a university or county office of education.

The District superintendent made a commitment to invest in and grow its own leaders. CASC is available only to District administrators and is provided free of charge to participants. CASC employs eight full time coaches whose primary responsibility is to provide professional development and job-embedded coaching. Although the program is free of charge to participating administrators, the per-participant cost to the District is approximately $12,000 for the two-year program. Through reflective coaching conversations, the District intends for CASC participants to gain insight into effective leadership practice.

Conceptual Framework

Numerous studies have documented the importance of school principals for school outcomes (e.g. Grissom, Kalogrides, & Loeb, 2015; Halliniger, Bickman, & Davis, 1996; Hallinger & Heck, 2010; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Robinson, Lloyd, & Rowe, 2008). Quality leadership is essential to accelerating student achievement in underperforming schools. "The most important factor in a successful turnaround is having the right leader. The right leader taking the right actions can overcome barriers that would otherwise prevent success" (Center for Comprehensive School Reform and Improvement, 2009, p.23). On the other hand, researchers have found that ineffective leadership can result in the spiraling conditions that lead to persistent low performance within schools (Ingersoll, Alsalam, Bobbit, & Quinn, 1997).

In an effort to provide guidance on foundational leadership practices, CASC uses six professional learning standards for education leaders as the underpinning of its induction program. The standards include creating a shared vision of student success, instructional leadership, systems and operations, family and community engagement, ethics and integrity,

and external context and policy (CTC, 2014). These standards serve as the framework for new administrator preparation and are the basis for coaching conversations.

To ensure a high-quality coaching component of administrator induction, CASC follows six steps in guiding the work: 1) recruitment and selection of coaches, 2) initial training and preparation, 3) calibration, 4) continued professional development, 5) assessment, and 6) refinement of practice (Nava, Estrada, Ramos, Crossin, Rodriguez & Sotomayor, 2018). Herman et al. (2008) found that successful school leaders use data-based analysis and decision-making to identify performance problems and develop appropriate action plans to address them. CASC selected school principals that matched Herman's description to serve as full-time coaches. CASC coaches receive 24 hours of initial coach training to build their capacity as facilitators of learning and reflection. CASC coaches meet on a weekly basis to share coaching stories, ensure uniform messaging of induction requirements, calibrate the quality of work samples, and share promising practices.

Coaches engage in scenario based conversations centered on the District's Coaching Cycle and its associated coaching competencies framework that includes the four coaching components of preparation, relationship building, pushing for depth and reflection, and action/closure (see Figure 1). To assess the level of impact and effectiveness, CASC participants completed anonymous surveys regarding their experience with their coach and some were selected to participate in a focus group session. This provided a rich data set to monitor and assess the quality of coaching conversations. District personnel occasionally shadowed a coach and candidate to observe, script, and provide ratings about the quality of the coaching conversation.

Figure 1

District Coaching Cycle
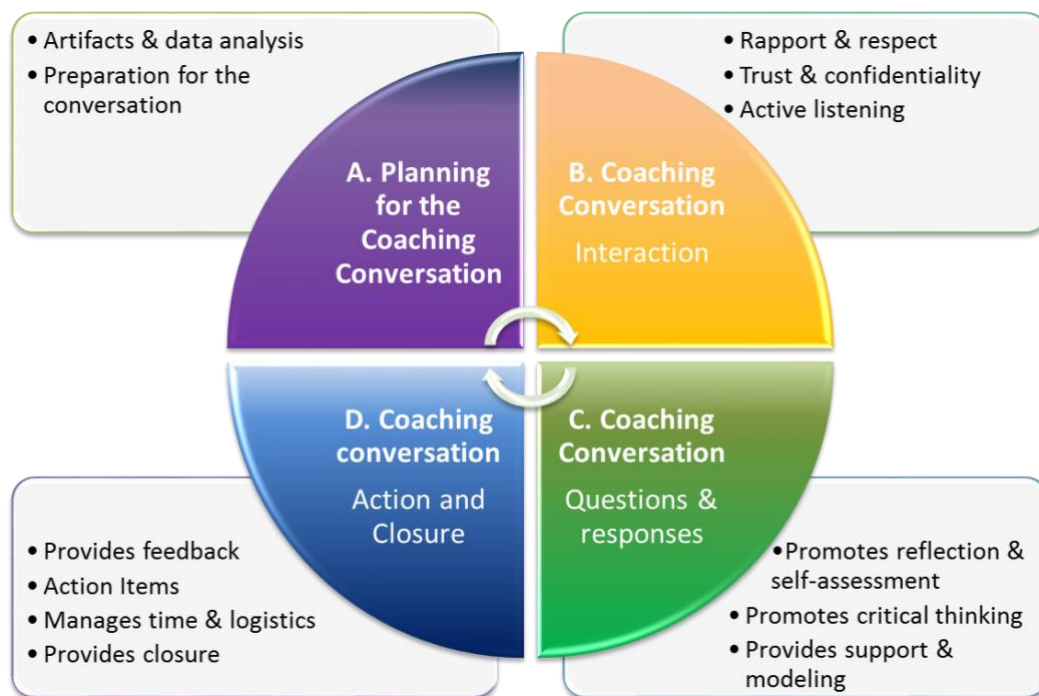
Feedback, anchored in the coaching competency framework, was provided to coaches to help them reflect on their own practice. Using data and feedback, CASC coaches continually worked to refine and improve their practice in order to support new administrator leadership development.

The Procedure

This report relies on four data streams: an online survey, a focus group protocol, an assessment of coaching competencies from qualitative observation and rubric scoring of coaching practice, and Most Significant Leadership Change (MSLC) interviews. This data was derived from participants in CASC year one. Cohort 1 through 6, and 10 were selected when they completed the two-year cycle for the MSLC interviews. An anonymous survey was distributed online to 177 participants. A total of 160 questionnaires were completed with a 90% response rate; 65% of these responses were from school site administrators and 35% non-school site.

Focus groups were conducted at the end of the first year with a purposive sample of participants in each cohort to discuss the successes and challenges experienced during their first year. The researchers designed a semi-structured focus group protocol to provide focus group participants with the opportunity to elaborate on survey data previously collected (Harrell & Bradley, 2009). Focus group participants were recruited via email by research staff. Two separate focus groups were conducted for each pair of cohorts; school-site and non-school site personnel participated in separate focus groups. A total of 28 participants were interviewed.

At the end of CASC's first two-year cycle, individual interviews were conducted with 10 participants. These interviews were called the MSLC interviews and aimed to identify what the most impactful change to participants' leadership development occurred. Interviews were 15-20 minutes in duration. The open-ended question was: "What was your Most Significant Leadership Change as a result of participating in CASC?" There was minimal prompting to probe more deeply into responses.

As part of a cyclical refinement of coaching practice, and to control for bias, during the 2017-2018 school year, one coaching session of each CASC coach was observed by a member of the District's Human Resources Division but external to the CASC program. Evidence of coaching competency in the form of scripted notes aligned with the District Coaching Cycle and component coaching competencies framework, as well as rubric ratings were gathered from each coach. These ratings were also summarized at the program level.

Results

Through the survey protocol, CASC participants reported a high degree of satisfaction with the induction program and a positive impact that the coaching relationship had on their leadership development. Some findings from the survey are summarized below; complete survey results are in Appendix A. 157 of 160 administrators completed the entire questionnaire and three administrators partially completed it.

1. 98% of 158 respondents indicated that CASC has been instrumental in improving their leadership practices
2. 97% of 158 agreed that CASC coaches have been instrumental to their growth as leaders

3. 99% of 158 reported that their coach guided them to find their own solutions to issues/concerns they faced
4. 100% of 156 reported that their coach provided appropriate and constructive feedback on their induction work

The following are the initial focus group findings:
1. High-quality implementation of the CASC induction program components led to increased satisfaction among participants.
2. Coaches have been integral to the success of program participants.
3. Participants indicated the CASC program has had a positive impact on their leadership practice, knowledge, and skills.
4. Participants were grateful that the program was free, but agreed that if a cost was required, they would still continue to participate.

Observation of coaching competencies revealed that on a scale of ineffective (1), developing (2), effective (3), and highly effective (4), coaching was rated effective overall (mean=3.38; sd=0.57) with elements in the coaching interaction (respect and rapport, trust and confidentiality, and active listening) rated highest (mean=3.78; sd=0.43), and elements in action and closure (feedback, action items, management of time and logistics, and provides closure) rated the lowest (mean=3.13; sd=0.55). As coaches received and discussed their evidence and ratings with CASC colleagues, a noticeable improvement was made over 4 months, especially in the areas of action and closure. See Appendix B for the average ratings across all coaching competency components.

Themes from the Most Significant Leadership Change Interviews were:
1. Participants reported improved self-reflection rooted in a more holistic understanding of their roles and responsibilities as a leader;
2. The CPSEL standards provided them with goals based on six core areas;
3. Coaches served as role models and participants now understand the importance for them to coach their faculty and staff; and
4. Participants were more purposeful and strategic with their decision-making as a result of taking more time to stop and understand why they were doing what they were doing.

Recommendations

School districts invest a vast amount of resources into new administrator growth and development. Data collected in this report suggests that new administrators valued convenient professional development time and coaching. Although the induction and coaching components are more expensive than traditional administrator credentialing programs, participants reported that the program was worth the cost to the District. Comparing CASC with other professional development formats would be useful.

Further study should examine the choice of retired principals as coaches. Are they in the best position to help participants navigate credentialing requirements and support new administrators, as these administrators endure evaluation and seek promotion?

While new administrator participants appreciated the opportunity to network vertically and horizontally across the District, expressing their satisfaction with this induction and coaching program, the authors recommend continued regular collecting, analyzing, and use of

formative feedback from participants, to ensure that participants continue to find added value in this program. Through this program, CASC is investigating how best to support new administrators provide successful leadership.

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Appendix A

Responses to All CASC Questionnaire Items: Year 1, Cohorts 1 through 6

1. I am a/an (check all that apply):

Position	Percent	Count
Principal	12.3%	19
Assistant Principal	54.2%	82
Coordinator	8.4%	31
Director	1.8%	1
Specialist	23.9%	37
Other --- Write In (Required)	0.6%	1
	Total	**155**

2. Which location type best matches your primary work location?

Work Location	Percent	Count
School Site	64.5%	100
Local District Office	18.1%	28
Central District Office	16.1%	25
Other --- Write In (Required)	1.3%	2
	Total	**155**

3. How strongly do you agree or disagree with each statement about the CASC Year One program in the following areas?

Survey Item	Strongly Agree Percent Count	Agree Percent Count	Disagree Percent Count	Strongly Disagree Percent Count
A. The California Commission on Teacher Credentialing (CTC) and CASC clear administrative services credential requirements for year 1 were clearly explained.	75.5% 120	22.0% 35	1.9% 3	0.6% 1
B. The induction days provided me with the information needed to understand the California Professional Standards for Education Leaders (CPSELs).	77.1% 121	21.0% 33	1.3% 2	0.6% 1
C. The CASC Problem of Practice helped me understand the importance of using a cycle of inquiry and reflection in my leadership practices.	66.0% 105	30.8% 49	1.9% 3	1.3% 2
D. My coach provided effective support of my work on the Problem of Practice.	82.4% 131	15.1% 24	1.9% 3	0.6% 1
E. Holding induction days and coaching sessions during work hours was an effective use of my time.	87.3% 137	10.8% 17	1.3% 2	0.6% 1
F. My work in the CASC program was connected to work in my current role as an LAUSD administrator.	85.5% 136	12.6% 20	1.3% 2	0.6% 1
Overall, the CASC program has been instrumental in improving my leadership practices.	74.1% 117	24.1% 38	1.3% 2	0.6% 1

4. In what ways could the CASC program be improved to better meet your needs? (Themes determined through thematic analysis and content coding)

Response theme *(sample comment)*	Count by cohort	
	1-2, 3-4, 5-6	Percent
Positive *(Everything is great. I wouldn't change anything.)*	8 10 13 31	25%
None *(None at this time)*	5 10 13 28	22%
Coaching beyond requirements, Different coach *(More coaching less tutoring)*	1 0 0 1	1%
Applicability for non---school participants *(Make it dually comprehensible for School Site and Non-School Site administrators)*	2 0 0 2	2%
Clearer expectations *(The initial logistical organization instructions could have been clearer as it took some time for me to understand exactly what I needed to do to organize all the components)*	10 3 1 14	11%
Coordination with other PLLD program *(Graduate of CASC = Meets APP program requirement)*	1 0 0 1	1%
Management support, site issues *(Meet with our administrators at the beginning and the end of the program to assist us with meeting the requirements of the CASC, obtain their full cooperation, provide feedback)*	2 0 0 2	2%
Material, PD improvement *(Integrate the Learning Log and Induction Plan into one form. Have year end reflection as a separate form)*	2 0 0 2	2%
Meetings, more, collaborate, meeting/work time *(I would benefit from having one or two more meetings per year. I find that it is very helpful to talk with other administrators in the program, and these meetings are the only opportunity for collaboration)*	7 9 5 21	17%
Meeting location, times *(Meetings on Saturdays/evenings, online collaboration?)*	2 4 2 8	6%
MyPLN improvement *(Better platform than mypln)*	2 2 0 4	3%
Recommendation *(Maybe create a blog where we can check in to see if FAQs are there, more examples of CPSELs)*	2 3 6 11	9%
Grand Total	**44 41 40** 125	**100%**

5. What challenges, if any, have you experienced with your participation in the CASC Year One program? (Themes determined through thematic analysis and content coding)

Response theme (*sample comment*)	Count by cohort 1-2, 3-4, 5-6	Percent
Positive, coach (*Any challenges that I had were negated by the flexibility and support of my coach*)	4 3 2 9	6%
None (*No challenges at this time*)	6 10 17 33	23%
Time, time management (*The challenges have been the "regular" work overload not enough time challenges*)	13 19 11 43	30%
Amount of work (*A lot of work on top of regular duties*)	0 5 2 7	5%
Clearer expectations (*In the initial phase of the program the logistical explanation of how to post and deadlines were unclear*)	7 6 0 13	9%
Issues with evidence collection (*Identifying evidence within my everyday work for some of the CPSELs, It's important to be diligent at documenting*)	0 2 9 11	8%
MyPLN, Negative (*The platform is not easy to navigate...*)	8 0 2 10	7%
MyPLN, Positive (*Uploading evidence was time consuming but at the same time the platform made it practical*)	1 0 0 1	1%
Management support, site issues (*At times, other administrators not in the program who I report to have not understood the "job--embedded" aspect...staff has been immensely helpful in intervening and communicating this whenever necessary*)	3 0 0 3	2%
Coach Issue (*Appointment times to meet were very limited, stressful sessions, Having two coaches. Their opinions could not have been more varied*)	2 0 1 3	2%
Applicability for non---school participants (*The CPSELs are not written for non--school based administrators. I have had some difficulty tying my work to the CPSELs at times*)	2 0 0 2	1%
Issue with administrative assignment, multiple schools	0 1 1 2	1%
Coordination with other PLLD program (*Ineffective communication regarding APP program*)	1 0 0 1	1%
Off---site requirements (*It was a bit challenging arranging my schedule around the induction days because it required me to be away from my site(s) all day*)	2 0 1 3	2%
Specific CPSEL issue (*My only challenge was centered around CPSEL 6 and my lack of experiences in this area.*)	1 0 0 1	2%
Grand Total	**50 46 46** 142	**100%**

6. Think about your relationship with your CASC coach. How true were each of the following statements about your interaction with your coach?

Survey Item	Always Percent Count	Some-times Percent Count	Rarely Percent Count	Never Percent Count
A. I could reach my coach when I needed support.	94.3% 149	5.7% 9	0.0% 0	0.0% 0
B. My coach guided me to find my own solutions to the issues/concerns I faced.	93.0% 147	6.3% 10	0.6% 1	0.0% 0
C. My coach provided appropriate and constructive feedback on my work.	94.9% 148	5.1% 8	0.0% 0	0.0% 0
D. I felt comfortable discussing challenging issues with my coach.	93.0% 147	5.1% 8	1.9% 3	0.0% 0

7. How much do you agree or disagree with this statement about your CASC Coach?

Survey Item	Strongly Agree Percent Count	Agree Percent Count	Disagree Percent Count	Strongly Disagree Percent Count
Overall, my CASC coach has been instrumental to my growth as a leader.	**85.4%** **135**	**11.4%** **18**	**3.2%** **5**	**0%** **0**

8. In what ways might your CASC coaching experience be improved? (Themes determined through thematic analysis and content coding)

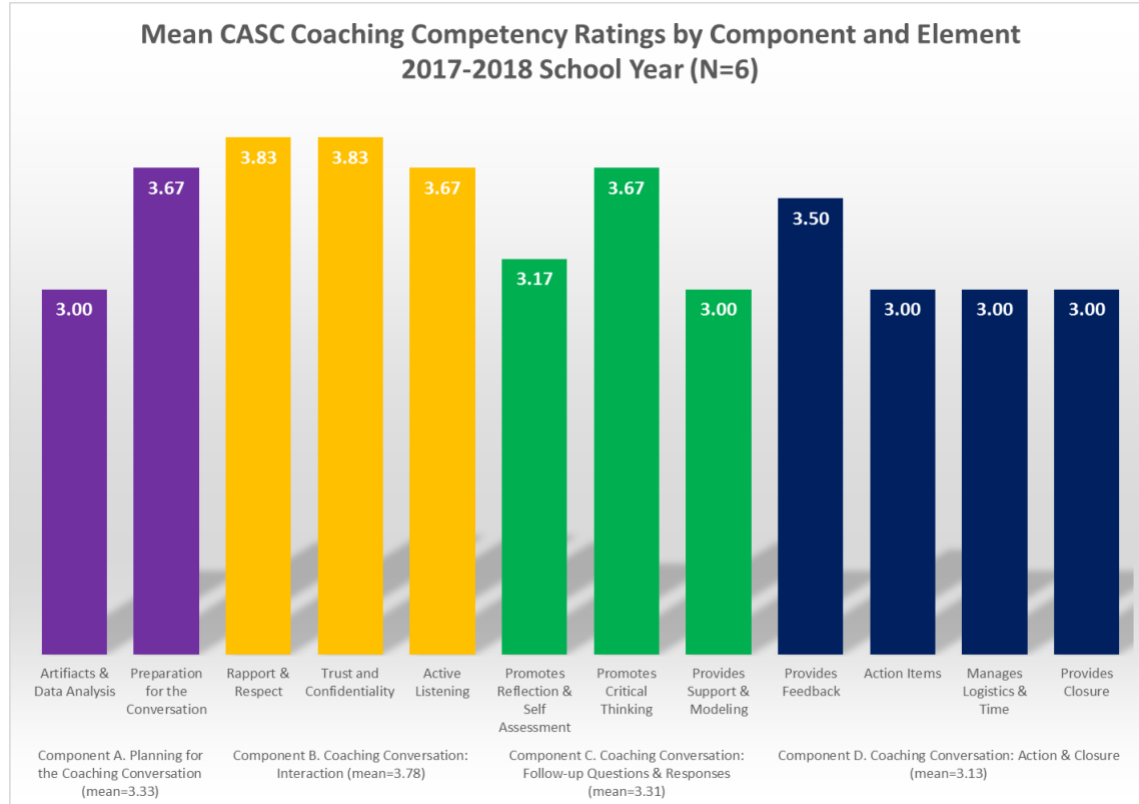| Response theme (sample comment)	Count by cohort 1-2, 3-4, 5-6	Percent
Positive (I have a highly qualified and experienced coach. I do not have any suggestions for improvement, None, N/A)	22 16 17 55	50%
Positive, specific coach (NAME was always available and very supportive. S/he is an excellent coach)	5 5 4 14	13%
Negative, coach (Feedback confusing, less off-task discussion)	0 1 1 2	2%
Coach availability, more meetings, more time, meet away from school (Difficult to find meeting times that worked for both of us. Would have liked more opportunities to meet together)	4 4 3 11	10%
Coaching beyond requirements, more help (Not just focusing on the requirements and instead discuss the problems I am facing as an administrator, different coaching focus)	4 2 5 11	10%
Streamlined materials (We would benefit from a consolidation of paperwork.)	1 0 0 1	1%
Group Coaching (Frequent monthly meeting to collaborate with others to gain strategies for improvement)	2 0 2	4%

	4	
MyPLN issue *(The platform, MyPLN was a source of frustration)*	1 0 0 1	1%
Clearer expectations *(Not everything was clear right from the beginning, consistency among coaches)*	1 4 0 5	5%
Other	3 0 2 5	5%
Grand Total	**43 32 34** **109**	**100%**

9. If you have any additional comments about the CASC Year One program, please enter them here.
(Themes determined through thematic analysis and content coding)

Response theme	Count by cohort 1-2, 3-4, 5-6	Percent
Positive *(Thank you. I am definitely a better and more experienced administrator thanks to my work with CASC, none, N/A)*	12 18 18 48	49%
Positive, coaching *(I want to thank the coaches for their endless support and guidance)*	16 8 6 30	31%
Positive, job embedded *(I really found it helpful that all classes are held during my work day, I am grateful to this work embedded program that allows me to learn first-hand from people in my district.)*	6 3 2 11	11%
Applicability for non-school participants *(I would recommend hiring coaches from different disciplines (not just principals))*	1 0 0 1	1%
Clearer expectations *(Coach, wasn't able to always be clear about the expectations)*	1 0 0 1	1%
MyPLN *(My only concern was with the way in which documents were modified in the system)*	2 0 0 2	2%
Organizational Skills *(a balance between all activities and organizational skills needs to be emphasized to ensure that progress and documenting are taking place simultaneously)*	1 0 0 1	1%
Specific suggestion *(partner with administrators working on same problem of practice, sample year 1, year two work)*	0 0 3 3	3%
Grand Total	**39 29 29** **97**	**100%**

Appendix B

Mean CASC Coaching Competency Ratings by Component and Element
2017-2018 School Year (N=6)

Book Review

Inquiry in Tandem: Student and Teacher Learning in Secondary Schools. By Christine D. Clayton, and James F. Kilbane Jr. (Peter Lang Publishers, 2020)

Yvonne L. White
Hayward Unified School District

Past educational reforms emphasized standardized tests to measure teacher effectiveness and student learning. However, such tools created an academic culture where high-stakes tests drove the school curriculum, thus limiting teachers' ability to implement teaching practices that encouraged authentic learning. Current reforms such as NGSS (Next Generation Science Standards) and CC (Common Core) learning standards state that all students acquire 21st-century skills such as critical thinking, communication, and that collaboration be steeped in inquiry as a way to enable students to gain the competencies needed to compete in the growing global economy. The stage has been set for a different pedagogy where teachers and students use inquiry as a new approach to learning. And it is in this context that we receive the book *Inquiry in Tandem. Student and Teacher Learning in Secondary Schools* written by Christine D. Clayton, and James F. Kilbane Jr. (Peter Lang Publishers, 2020).

The book *Inquiry in Tandem* is an essential guide for leadership preparation programs, administration leadership, teachers (particularly from the secondary grades), education scholar-practitioners invested in redefining the scope of their teaching practices, pedagogy, and increasing student engagement.

Summary

Inquiry in Tandem makes a compelling argument that secondary teachers' instructional practices include inquiry to improve learning outcomes for students. As the authors state, "inquiry is not only necessary for their fuller participant in a community of learners but is critical to the kind of intellectual engagement that builds content understanding" (p. 21). In other words, teachers ought to change their methodological approach and move students beyond the memorization of factoids to engaging young minds in a more democratic approach to learning. This is especially important to minoritized-student communities where issues of inclusion and equity outcomes profoundly affect their achievement, and life prospects.

The authors address the central question: *What would happen if teachers created a classroom culture where student voice, student questions, student observation, and student inquiry and design are valued and considered essential to the learning process?*

To address this central query, the authors divide the book into three parts - Part 1: Inquiry as Pedagogy and Professional Development, Part 2: Secondary Teachers and Students as Inquires, and Part 3: Reflection on Inquiry in Tandem. Each part is designed to provide readers

with a student-centered inquiry focused curriculum, rather than the traditional teacher-centered curriculum.

In Part 1, the authors give a theoretical framework as to why inquiry is needed as pedagogy in the light of new educational reforms. More importantly, the authors elucidate why *Inquiry* should be used as an intentional approach to strengthen student learning.

In Part 2, the authors demonstrate the challenges of teaching through inquiry from the perspective of practicing educators. In essence, this part of the book provides the reader with a step-by-step approach as a guide to incorporate inquiry into ones' practice. More importantly, here Clayton and Kilbane offer reflections of science, language, and social science professionals' experience using inquiry in their various classroom curriculum. The book was written based, in part, on the author's work - they created an interdisciplinary professional learning community (PLC) centered on inquiry. By creating a space to reflect upon their own teaching practices, participants gained the confidence needed to break from traditional educational methodology and advance their professional expertise to support student learning through inquiry. As the authors clearly describe, rethinking educational practices requires support to create capacity and prolong instructional change.

In Part 3, the authors position student inquiry at the center of teacher inquiry. The positioning of students at the core of teacher inquiry is a visual reminder that increasing student engagement is central to the learning process.

Inquiry in Tandem is a noteworthy resource for educators interested in impacting student learning outcomes. Practitioners will readily find resources that they can use immediately to integrate into their course curriculum. *Inquiry in Tandem* is not only a practicum for practitioners to help engage struggling students, it also serves as a research critique on inquiry as a research methodology. Scholar practitioners will appreciate its metacognitive approach to examining how inquiry influences learning from the perspective of the educator, the student, and how each individual experience dynamically impacts the other.