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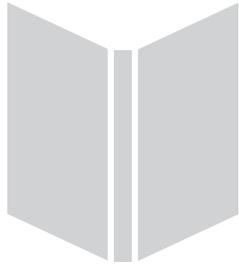
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Leading the Newly Consolidated High School: Exciting Opportunity or Overwhelming Challenge?

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In the current economic times, school personnel are regularly challenged to reduce the costs of operating the nation's school systems. School district consolidations often are proposed as a mechanism to realize fiscal savings for local communities; indeed, the number of U.S. school districts has declined dramatically over the past 70 years, decreasing from 117,108 in 1939-40 to 13,809 in 2008-2009 (Snyder and Dillow 2010). Consolidations may occur to promote fiscal and administrative efficiency, or as a result of significant enrollment declines, diminished real estate valuations, and limited availability of highly qualified teachers (Howley, Johnson, and Petrie 2011; Zimmer, DeBoer, and Hirth 2009). Research primarily has focused on perceived benefits and disadvantages of consolidations and superintendents' political roles in negotiating through consolidation conversations within the impacted communities (Alsbury and Shaw 2005). An overlooked topic has been the high school principal's role in guiding the formation of a unified culture once the consolidation occurs—a responsibility that can be particularly challenging when two or more schools are consolidated to create a new high school. Time-honored traditions may be discarded and new rituals developed as students and faculty work to form a unified learning community.

The principal's responsibility to create a positive school culture is an important component during the first year of a school's formation, but, at the same time, accountability mandates of the No Child Left Behind Act of 2001 (NCLB)[1] do not permit student achievement goals to be ignored during this transition period. It is essential for the principal to simultaneously commit to both the development of school culture and a focus on student learning during the school's formation. Yet, emphasizing both of these elements can be exceedingly difficult during this initial year of operation. What are the challenges that the principal faces during this transition phase? Is it possible to maintain a focus on student learning while also attending to the development of a shared organizational culture and addressing the structural elements of forming the new school?

This article describes a case study of one principal throughout the initial year of a newly consolidated high

school. It begins with a brief review of school consolidation research and research on leadership for learning, which served as a theoretical framework for this study. It then presents findings from the case study; in the discussion and implications sections, comparisons are made to prior studies and recommendations are provided for school districts and for policy.

Review of Literature

This study was informed by two bodies of literature, which address school district consolidation and leadership for learning. The first topic, school district consolidation, focuses on the historical, legislative, and fiscal influences on its reported benefits and challenges. The second topic examines the literature related to leadership for learning as a theoretical perspective from which to consider student academic growth.

School District Consolidation

The impetus for school district consolidations often is grounded in the desire to combine school systems to improve the quality of educational programming or to increase fiscal efficiency in educating children in rural communities. Topics addressed may include optimal school size, potential loss of community identity, political influences, power structures operating within the affected communities, and a desire for enhanced school experiences for students (Self 2001; St. Cyr Davis 2005). Consolidation can be facilitated by state legislators' efforts to reduce the number of school districts through mandatory or voluntary avenues. For example, in 1948 the state of Arkansas mandated dissolution of districts containing fewer than 350 students, which resulted in a reduction in the number of school districts from 2,451 in 1948 to 421 in 1949 (St. Cyr Davis 2005). However, heavy-handed efforts to force district consolidations can be met with vigorous resistance: Illinois enacted a law mandating school district reorganizations in 1985, but the legislature immediately repealed it after intense political backlash from constituents (Phillips and Day 2004). In an effort to encourage voluntary consolidations, several states provide fiscal incentives to school districts. Incentives may consist of a one-time financial stipend or supplemental payments for a fixed period of time to compensate for losses in state aid payments that would have been received if the districts had elected not to consolidate. The majority of consolidations across the United States have occurred through voluntary incentive programs (Grider and Verstegen 2000).

Proponents advance several arguments for district consolidations. One rationale promotes the infusion of sufficient student numbers to provide enriched curricular and extracurricular opportunities, particularly in high schools (Alsbury and Thomas 2008; Nitta, Holley, and Wrobel 2010). Opportunities may include expanding vocational/technical, foreign language, honors, and Advanced Placement (AP) courses; student choice may also be facilitated by increasing the number of course sections provided within the daily schedule. Students may benefit by having sufficient numbers to field competitive sports teams, music groups, and other cocurricular clubs. Proponents cite declining enrollments, declining property values that result in diminished school

district revenues, and the limited availability of highly qualified teachers as factors that can erode educational quality in small rural districts (Alsbury and Thomas 2008; Jimerson 2006; Nitta, Holley, and Wrobel 2010). Fleming and Hutton (1997) framed the consolidation debate in "either/or" terms: either saving money or improving students' opportunities for learning.

Community resistance to consolidation can emerge, with the loss of local control cited as the primary concern. Opposition may be more vigorous when consolidation encompasses larger geographical areas, such as countywide districts; it can create a "cultural, social and economic void in rural places" (Jimerson 2006, 11). Alsbury and Thomas (2008) described the potential loss of a distinct community identity, as well as a change in school culture or values, when a small district is absorbed into a district with a more pronounced community identity. Consolidation often "inhibits the spread of cultural knowledge and exacerbates a community's social and economic problems" (Nitta, Holley, and Wrobel 2010, 3). Opponents cite negative consequences for students, such as longer bus rides and larger class sizes (Alsbury and Thomas 2008; Zimmer, DeBoer, and Hirth 2009). Other concerns relate to perceived reduction in community representation on the board of education (Alsbury and Thomas 2008), and parent participation (Howley, Johnson, and Petrie 2011; Nitta, Holley, and Wrobel 2010). A school closure may be viewed as the death of civic life within the community, although Nitta et al. (2010, 3) could find "no causal argument" suggesting that loss of the school was directly responsible for the disintegration of the local community.

Despite potential local resistance to district consolidations, school district superintendent support for consolidations has been documented. Alsbury and Thomas (2008) cited findings from a national superintendent survey indicating that 86% of respondents favored school district consolidation. Research suggests that school district leaders must fulfill a management function when communities are considering consolidation and once the consolidation decision has been reached (Alsbury and Thomas, 2008; Nitta, Holley, and Wrobel 2010; Self 2001; Strang 1987), including the responsibilities related to enrollment coordination, facilities, staffing, financial decisions, and transportation (Zimmer, DeBoer, and Hearth 2009). School consolidations also can present significant challenges for school principals, who arguably are at the front line of this debate, as parents and community members passionately argue the merits and disadvantages of this issue. The principal hired to lead a newly consolidated school must address the challenges of creating a new sense of identity for students and staff, attending to the managerial and structural demands of forming the new organization, and also maintaining a consistent focus on student learning.

Leadership for Learning

The leadership for learning framework can be an effective mechanism to view the high school principal's essential leadership role in facilitating a school consolidation through a focus on student, faculty, and organizational learning. Leadership for learning, according to Knapp et al. (2003),

establishes five areas that effective leaders address: (1) establishing a focus on learning; (2) building professional communities that take learning seriously; (3) engaging external environments that matter for learning; (4) acting strategically and collaboratively along pathways of activity aimed at different aspects of student, professional, and system learning; and (5) creating coherence. The high school principalship is becoming increasingly complex (Grubb and Flessa 2006), and this position can be even more challenging with the additional component of leading a newly consolidated school. As a lever of change, the principal must be strategic in obtaining the commitment of faculty and students to the learning process (Mulford and Silins 2003).

Researchers have cited the importance of the principal's role in facilitating productive learning cultures. Although the principal's effect on student learning is indirect, research has confirmed that one fourth of the variance on student achievement is related to the principal's influence (Leithwood et al. 2004). One mechanism leaders can employ to promote learning is by focusing the entire system on quality learning for all students (Knapp et al. 2006). Visiting classrooms regularly and publicly recognizing teachers for effective teaching and learning practices can encourage teachers' efforts to improve student performance (Mezzacappa et al. 2008). Copland and Boatright (2006) noted the importance of personalized strategies and leadership distribution as helpful in promoting student achievement. Additionally, Robinson, Lloyd, and Rowe (2008) concluded that teacher learning and ultimately student success improved when principals exerted pedagogical knowledge on practices or policies related to student achievement.

Researchers cite the importance of the principal's role in promoting teacher learning and professional growth. This influence began to be recognized through the process used to clarify the work of teaching and learning, which led to devoting more attention to instructional issues that addressed student learning and evidence of program effectiveness (Hallinger and Heck 2010; Knapp et al. 2006). This influence has been described as the strengthening of communities of practice (DuFour, DuFour, and Eaker 2008; Louis et al. 2010). The mechanisms by which school leaders shape school conditions perhaps can be facilitated through the establishment of a shared or distributed leadership environment (Hallinger and Heck 2010; Louis et al. 2010; Murphy et al. 2009).

Research Questions and Methodology

Informed by the literature review, this case study investigated how a high school principal addressed student learning in a newly consolidated school. Two research questions were explored: (1) How does the principal maintain a focus on student learning during the first year of a district consolidation? (2) What factors facilitate or inhibit the principal's effectiveness in maintaining a focus on learning during the first year of a district consolidation?

This research involved a case study of one high school in the Midwest, with a focus on the leadership behaviors of the school principal throughout the first year of the school consolidation. Data collection included 10 interviews of the principal throughout the academic year, each ranging from 40 to 60 minutes. Initial interview questions were informed by Knapp et al.'s (2003) leading for learning framework, and subsequent interviews expanded upon emerging themes. Interviews also were conducted of members of the building leadership team, which consisted of two teachers and the assistant principal. Each team member was interviewed twice, with each interview lasting approximately one hour. Observations were conducted throughout the academic year of team meetings, faculty meetings, and school improvement activities. Document analysis was conducted of minutes of the board of education meetings and materials developed by the district consolidation committee that had facilitated the two districts' consolidation conversations.

The constant comparative method was used for data analysis with initial codes developed from the leadership for learning framework and common themes identified. Emic data were gathered to gain an "insider's perspective" of the principal, and etic data provided an "outsider's view" from the perspective of the teachers and other administrators (Merriam 2002, 6-7). NVivo 8 software was used for data coding, sorting, and assistance with the identification of themes.

Description of Case

Lakeside Community School District is situated in a rural area of a Midwestern state.[2] With approximately 1,500 students, it was formed when Gotham City School District and Metropolis School District voluntarily consolidated. Gotham City and its high school boasted a long tradition of educational pride and expectations of academic excellence while the Metropolis community was not known for its emphasis on academic excellence. State achievement test scores for Gotham City High School were stable over the past decade while those for Metropolis High School gradually increased. The most recent year's test data were similar for both schools, with 60% of students meeting or exceeding state standards in reading and mathematics, and 50% meeting or exceeding standards in writing. For science, 60% of Gotham City High School students met or exceeded standards compared to 50% of Metropolis High School students. However, Gotham City High School students did not meet federal NCLB adequate yearly progress (AYP) standards in recent years, while Metropolis High School students continually met them. The newly consolidated district contains five schools--three elementary schools, one middle school, one high school--and approximately 400 students are enrolled in the newly formed Lakeside High School. Like schools in many rural communities, there is little racial/ethnic diversity in the student body: 97% are white. Approximately one fourth of the students qualify for free or reduced-price lunches.

Megan Wayne, the newly appointed principal, retained her administrative appointment in the same building that now contains Lakeside High School, having served the past four years as Gotham City High School principal. A former English teacher, she also had served as principal in two other school districts. She holds a master's degree in educational

administration from a local college. Lakeside High School employs 48 faculty and staff members, of which 70% worked at Gotham City High School and 30% at Metropolis High School. Only one new employee was hired after the consolidation, Chase Grayson, who was appointed assistant principal to provide administrative support to Ms. Wayne.

The Lakeside Community School District superintendent, who previously was the Gotham City superintendent and provided administrative oversight to the district consolidation, made a significant commitment to erase all vestiges of the former Gotham City High School. Lakeside High School campus buildings were repainted in the new high school colors so that students would begin to assimilate into one combined student body.

Findings

This section presents findings related to the research questions, the first involving the principal's behaviors and activities that addressed student learning issues, and the second, which examined factors that facilitated and restricted her ability to focus on student learning.

Focusing on Student Learning

Throughout interviews, Principal Megan Wayne voiced the importance of maintaining a consistent focus on student learning, and she identified improving student learning opportunities within the school as a personal goal. These were apparent with the addition of AP Calculus, AP Chemistry, dual-credit English, and dual-credit welding courses to the curriculum in the spring prior to the consolidation.

When the school opened in late August, the need to develop a unified school culture became apparent to Megan. She explained that students and parents were apprehensive, and students were sufficiently concerned that they asked her if they would be disciplined for wearing memorabilia from either of the two former high schools. Assistant Principal Chase Grayson described the initial tension:

> A girl said when you walked into a class you saw the barrier—the physical barrier—because the Metropolis kids sat on this side of the room and the Gotham City kids sat on this side of the classroom. It was over a month before they were able to sit together.

Megan was concerned about the potential for conflict between students and personnel from the two former districts. Forming a new integrated culture was essential, as she explained:

> The Metropolis teachers felt that they were moving into the Gotham City teachers' territory…We spent a lot of time repainting and making this as new for everybody as we could so, psychologically, when people were walking into the building, it was a new school. It wasn't just Gotham City turned into Lakeside High School.

Relatively little effort had been expended on preparing students or faculty for the transition. Consolidation conversations within the communities had centered on the financial states of the two dissolved districts, with little attention to enhancing the curriculum, expanding cocurricular activities, or anticipating concerns about student needs during the transition period. Megan's administrative behavior and communication focused on management and operational issues—particularly, unexpected matters that arose. She created a principal's cabinet consisting of 16 students, four from each grade level who represented a cross-section of students from different social groups. This cabinet met monthly so that Megan could obtain candid feedback from students concerning what was working and what was not. Although she worked to incorporate their suggestions, she did not regularly share student feedback with faculty.

Observations of faculty meetings and school improvement meetings and teacher interviews confirmed that managerial issues consumed Megan's administrative work life during the first several months of the school year, and teaching and learning issues often were pushed aside. Megan regularly included topics related to curriculum and student academic performance on the building leadership team and faculty meeting agendas, but discussions digressed into concerns about student discipline, student apathy, and challenges presented by the district's new student management software. Although she was an experienced principal, Megan explained that student issues hampered her ability to operate as a learning leader. She reported "spending a great deal of time on discipline issues throughout the day," even though the new assistant principal was responsible for student discipline. "I need to be visible more," she asserted, aware that she was being pulled away from her instructional leadership duties to resolve some of the new school's organizational concerns. She cited her duty to supervise and evaluate 48 faculty and staff members, expressing her apprehension that she would have insufficient time for classroom observations.

Working with the building leadership team to develop the Lakeside school improvement plan, Megan and the faculty had identified goals to reduce student apathy; improve students' reading comprehension; and maintain a safe school environment. The third goal was operationalized by teachers supervising the hallways during between-class passing periods. Megan explained, "Of course, those were the teachers' goals and not necessarily my personal goals, which is as it should be." Megan asked teachers to work toward these goals during their departmental meetings, assuming that they would take responsibility for them.

During the first semester, the district administrative team did not schedule districtwide curriculum meetings, perhaps because they—like Megan—were consumed with creating the district organizational structure, policies, and procedures. After waiting for specific direction from district administrators, Megan decided not to engage the high school faculty in reviewing the curriculum. This lack of curriculum leadership was problematic because the two districts had different curricula in place. Now, within their departmental structures, Lakeside High School teachers potentially were functioning with unaligned curricula, differing instructional methods, and divergent grading methods. Megan stated that she had assumed a distributed leadership stance by "allowing the departments to work together," but the teachers

interviewed interpreted this approach as providing very little administrative support or guidance and, instead, "pushing off" her work onto them. Some teachers even described her approach as "avoidance," or a deliberate strategy to avoid conflicts.

Megan repeatedly asserted the importance of providing opportunities for teachers to collaborate so that they could develop collegial relationships while stating that she did not have time to personally lead these activities. Because the district administration also did not focus on curricular issues, teachers were left to develop curriculum and examine data related to student learning. As a result, departmental meetings often lacked a specific instructional focus, and instead centered on managerial tasks. According to Megan, the English and mathematics departments were the only departments that focused on curriculum, instruction, and student learning during the first semester. Whitney, a mathematics teacher, explained that her departmental faculty initially waited for administrative direction but finally became proactive when it was apparent that district and building administrators were not providing instructional leadership. The math teachers worked together to review and align their curriculum, and to incorporate the AP Calculus course into their course offerings.

Megan struggled with deciding whether she should be more directive in her leadership approach. She attended departmental meetings only sporadically, and two building leadership team members reported that she cancelled many faculty meetings and only occasionally attended their meetings. Megan asserted that "time limitations" and being "bogged down with discipline" hindered her full participation. Entering the final six weeks of the academic year, Megan decided to take a more active leadership role, regularly attending departmental and building leadership team meetings and calling upon the latter to begin to use and analyze student learning data. She decided that the current team, which was comprised entirely of volunteers, was ineffective in addressing pressing school issues. She asked Abigail, whom she perceived as an emerging teacher leader within the school, to assist her with identifying key individuals to serve on a restructured team. After handpicking and appointing the new building leadership team members, Megan seized upon the district's recently identified mandate to implement Response to Intervention (RtI) as an opportunity to refocus her efforts as learning leader. She dedicated the year's two remaining school improvement days to RtI training and called upon team members to assist with implementing RtI components. Megan personally made site visits to area schools that had successfully implemented RtI and called upon colleagues within her professional network to locate individuals with expertise in the program. Finally, she took pains to praise the efforts of all faculty members when they demonstrated notable progress on implementation. Abigail explained the positive effects of Megan's renewed emphasis on leadership:

> We pushed through it…made teachers work at it, and they didn't just sit around and do nothing. I think we are all really pushing in that right direction. Bouncing

ideas off her [Megan] has been good. I think that has really helped me.

Clearly, building leadership team members saw the relationship between these new leadership practices and their results in developing a building-wide focus and mission centered on student learning. The team felt re-engaged and re-energized around a vision for student learning that was well planned and organized with clear vision, mission, and goals. However, observational data did not confirm similar enthusiasm from other teachers because they were not involved in building-wide conversations about teaching and learning issues. Even while Megan began to focus on learning, she maintained a mindset to "survive the year." Looking back on her first year leading the consolidated school she observed, "Consolidation is good for kids but not for administrators."

Factors that Facilitated or Hindered a Focus on Learning

Also investigated were elements that promoted Megan's ability to focus on student learning, as well as those factors that restricted her instructional leadership effectiveness. Analysis of data disclosed several themes related to these elements. Three themes were identified that helped facilitate a focus on learning: distributed leadership practices, shared conversations and open dialogue, and establishment of a unified school culture. Four themes were identified that hindered the principal's ability to focus on student learning: school governance issues and concerns about micromanagement; lack of a shared vision of learning; difficulties managing pockets resistance within the faculty; and challenges of establishing a new school culture, traditions, and practices. These themes are discussed in this section.

Distributed leadership. Megan intended to place decision-making authority in the hands of teachers, and she initially worked to establish a culture of shared leadership within the school. She hoped the board of education trusted that she and the faculty had the collective knowledge and competency to make good decisions in accomplishing the district goals. Megan hoped the board viewed this process as, "We hired you as principal. Now go do your thing and report back to us about how things are going." She initially structured the building leadership team to include volunteer representation from each department. Interviews confirmed that the teachers had assumed decision-making authority in their previous schools, and they expected to maintain this influence in the consolidated school. As the end of the school year approached, Megan began to rely more heavily on the reconstituted building leadership team, placing them directly in front of the faculty so that school improvement processes could be viewed as colleagues talking with colleagues—what she described as a "professional learning community." All participants used the terminology, "distributed leadership," when describing Megan's actions to involve faculty in leadership roles, although they described these leadership functions in various ways. The principal believed the creation of these roles was necessary to establish an atmosphere of collaboration in the building. As the study concluded, evidence of distributed practice had begun to emerge.

Megan created two teacher teams to complement the work of the building leadership team—a school improvement team and a student assistance team—so that more teachers could have decision-making authority on issues related to student academic progress. She used the remaining school improvement days to implement a professional learning community model (DuFour et al. 2008), partnering teachers who were effective in implementing RtI best practices with those who were developing their skills. Whitney, a math teacher, praised these activities: "Everyone commented that we needed this, but it was directed by a teacher. It was teacher led." Chase, the assistant principal, noted their success:

> All of these groups are the most effectively run things that I have ever been around. Ms. Wayne did a very smart thing. She took everyone that was a PIA [pain in the (expletive deleted)] and threw them on the same team and said, "Okay, figure it out."

Abigail confirmed the development of the teachers' leadership capacity:

> Once we realized that leadership is a process, team building is a process, and things don't happen overnight...we began to be far more successful. By the end of the year, we were able to collaborate better with one another.

Shared conversation and open dialogue. When the Lakeside High School faculty initially came together in August, Megan's vision for the new school was not fully developed. Observations of the first faculty meeting indicated that building goals were unclear, faculty from the two former high schools were not yet unified as a cohesive group, and limited opportunities were provided for whole-faculty dialogue. Several months into the year, Megan concluded that the school's forward momentum had stalled. There was informal discussion among teachers about structural and policy issues within the building, but this dialogue was not translated into implementation. During interviews, Megan mentioned with a growing sense of urgency that the faculty's absence of action had to change. She began to recognize the importance of engaging the faculty in critical conversations to develop a shared understanding of the building vision, mission, and goals.

Several dissenters began to emerge within the faculty, whom Megan characterized as "extremely vocal in their complaints." Megan consulted with colleagues from other schools that had been involved in school consolidations; and, heeding their advice, she had cancelled regularly scheduled faculty meetings. She came to the realization that this decision was ill- advised because the dissenters were unable to have their voices heard. Megan believed that frustration with their inability to participate in school decision-making processes created increasing levels of anxiety, lack of trust in the administration, growing complaints about working conditions, and the potential for sabotage.

Recognizing the importance of building-wide dialogue, Megan began to create additional opportunities for faculty input and involvement. She wanted teachers to feel that changes were being done "with" them and not "to" them.

She appointed some dissenters to the leadership and school improvement teams, observing that, "Now they have to come up with a solution and be part of the solution instead of part of the problem." Chase reinforced the need for "valued and beneficial open conversation," and noted that, once new communication channels were in place, teachers became more collaborative and collegial. The school improvement team quickly developed a school improvement plan. Chase observed, "As far as SIP [the school improvement plan], we've got plans now. All of these things that should have been in place since day one."

As the year concluded, Megan acknowledged that creating opportunities for shared conversations and open dialogue were essential to developing a student learning focus. She remarked:

> I think we've made more strides school improvement-wise in the last six weeks than in the rest of the year….It's working like magic so far. It might turn around and bite me, but we've made a lot of progress.

Creating a positive, unified school culture. Observations and interviews indicated that students took the lead in working to establish a unified learning community. Megan noted that, although some teachers and community members were still unsupportive of the consolidation, the vast majority of students accepted the reality of the consolidation, saying "Okay, let's move on. This is the world we have now. Let's make it the best world we can." Whitney agreed:

> The kids really came together. They were hanging out anyway with kids from the opposite district, and now they are dating each other, playing ball together, and they're working together.

Megan and Chase used the cohesiveness of the student body as an opportunity for the faculty to learn from the students' example. Noting that "the teachers have been watching the kids come together," Megan hoped that the "us and them" mentality for the teachers from the two former schools would move to "we," a unified faculty.

Megan observed that initially teachers were divided into two camps, "pointing fingers" with regard to inadequate student performance based upon which high school they worked at prior to the consolidation. In her first interview, Megan was unaware that she had not yet mentally transitioned to a unified school culture herself, as she voiced the need to be "fair in how we address things between the two common faculties." As teachers were given opportunities to interact and to explore teaching and learning issues through building leadership team meetings and school improvement days, they began to analyze student data, without thought as to whether the students were originally from Gotham City or Metropolis. Megan also believed that the leadership team helped to "establish that atmosphere of, hopefully, collaboration and less isolation" that she believed was typical of larger comprehensive high schools.

With Megan's support, the building leadership team gave a presentation to the school board in which they requested early-out work sessions on the first and third Friday afternoons of the month during the upcoming academic year which

would be used for curriculum conversations, curriculum audits, and examination of college readiness benchmarks. Megan was thrilled that the board approved their proposal because the sessions represented an opportunity for the faculty to continue to deepen their collaborative relationships and to focus on student learning.

School governance and school board micromanagement. The most significant concern, voiced in 15 of the 16 interviews, related to perceptions by the principal and teachers that they were closely monitored by the board of education, and therefore were given very little decision-making authority. The school board included members from the two closed school districts; hence, just as the consolidated high school faculty was learning to work collaboratively, members of the new school board also were learning to function as a cohesive group. Megan believed that board members enjoyed their authority, stating:

> They are in control of what they can table and what they can pass and what they can disapprove….Every step, every bit of it is micromanaged.

Some teachers believed that a rigid organizational hierarchy characterized the new district. Abigail explained:

> We have a board who likes to micromanage. We then hire a superintendent who likes to micromanage. We get down into it, down farther, and people are frustrated with the micromanaging.

The faculty was used to functioning under the policies and practices of their respective now-dissolved school boards, which were less restrictive, and assumed that the new board's procedures would align with them. Board members, administrators, and teachers were experiencing the formation of a new organizational culture. Uncertainty existed about the chain of command and who was empowered with what decision-making authority. Megan believed that, as a result of board politics, board members were restricting the superintendent's leadership influence, which had an unintended consequence of hindering her authority to serve as the high school's learning leader. Concluding that her superintendent had "been cut off at the knees this year also by the board directing and not letting him do his job," Megan was not certain that she had the support of her board and superintendent. Consequently, she reacted by deferring decisions to the superintendent, which created role confusion and uncertainty for teachers. Whitney explained:

> Your chain of command as teacher is to go to your principal and not deal directly with the superintendent unless it is very, very severe. That has not happened here. If I have to go get something, I have to go to him [the superintendent]. Every time something changes, it's through him. So, I don't really get what her purpose is.

Megan believed that the board's oversight created an "unpredictable" environment, in which high school administrators and teachers felt that their decisions were being "second-guessed" by board members. Abigail also felt that high school administrators' "hands are tied," asserting that they should have the authority to make decisions without

the school board implementing a different course of action. Abigail lamented, "After a while you decide why waste your time. You're just spinning circles wasting time." Chase also observed that teachers were beginning to "expect knee-jerk reactions" from the board.

Chase initially believed that micromanagement was not an issue. However, he later described a situation in which the school board decided to involve the local police in investigating a student fight without his knowledge, overriding his authority as the school disciplinarian. Expressing his surprise when the police "just showed up one morning," Chase explained:

> You know, the thing with the police was a little bit ridiculous. It didn't solve anything, cost a lot of money…It really left a bad taste in some people's mouths.

Difficulty creating a shared vision of learning. Significant efforts had gone into the research, planning, development, and implementation of the school district consolidation, but district officials spent most of their energy on addressing the structural elements of the consolidation rather than on teaching and learning needs. Megan said the intricacies of the consolidation meant that important conversations about the district vision for student learning were pushed aside. It was not until December of the implementation year that the board began to engage in strategic planning, including development of its mission, vision, and goals. No participants interviewed had read or heard an articulated vision for the district. Abigail, who was enrolled in a graduate program to attain her principal' licensure, reported that the superintendent could not produce a copy of the district vision when she asked for one to use for a course assignment.

Megan stated that she had attempted to develop a vision of learning for her building, but she found it difficult to create one in the absence of a district vision. The cancellation of high school faculty meetings was viewed as problematic by the teachers because faculty were not provided opportunities to dialogue and to reach shared understandings about effective classroom practices; neither were they receiving information from the administration. Teachers reported learning about important building-level issues from students, who seemed to be much more "in-the-know." Whitney asserted: "We just need to keep working on our communication," arguing that regular faculty meetings were sorely needed. Abigail expressed frustration with the lack of meetings: "It's the first year of consolidation, half your staff is new, and we don't have anything to talk about?" Megan reluctantly agreed that communication was a concern and reported that she was uncertain about what she was permitted to share with her faculty because of her perceived tenuous relationship with the superintendent and school board.

During a faculty meeting in March, it was observed that a critical issue was placed at the end of the agenda which had the effect of limiting the time for faculty discussion on an important topic. Because opportunities for faculty dialogue were minimal, discussions in the few faculty meetings that were held often revolved around managerial and organizational issues that needed urgent attention, with little

time remaining to discuss student learning. Megan reported having numerous "individual conversations" with teachers on an informal basis involving curriculum concerns. However, building leadership team members reported that these one-on-one talks did little to promote a shared learning culture throughout the building. Explaining that conversations often were prompted by the faculty members themselves, Whitney stated, "You know we have to go to her if there is an issue." Leadership team members believed that, as the school's learning leader, it was Megan's responsibility to initiate faculty-wide conversations about student learning, and they expressed frustration that this was not occurring on a regular basis.

Managing pockets of resistance. Megan and Chase both stated that many teachers and community members who had opposed the district consolidation incorrectly believed that the option existed to dissolve the consolidation and return to their prior districts after the first year. The administrative team observed that some individuals were overtly resisting their efforts to bring faculty and students into a cohesive group. The building leadership team members stated that Megan should become more authoritative by addressing those who vocally challenged proposed school reforms and asserting her role as the building leader. Chase observed, "I think she's not as forceful as she could be." Megan was hesitant to take control of building-level decisions, but she did not realize that this hesitancy greatly affected the teachers' commitment to focus on what was expected of students. All individuals interviewed agreed that the building leaders were primarily responsible for anticipating resistance to change and communicating expectations for personnel performance.

One consequence of teachers' resistance was that some teachers began to isolate themselves from their colleagues. Chase believed this isolation was a trust issue: "I don't know that people really trust each other like they should in this building." He noted that the lack of collaboration had been a problem throughout the year, which hindered the development of trust across the faculty and administration, stating:

> The majority of teachers in this building have not talked with the other teachers in their department. You know—those from the opposite school district that joined with us.

Looking back, Megan reflected on the fact that the building and district had not scheduled any team-building activities at the beginning of the academic year, which could have been purposefully designed to begin to break down barriers that existed between the two teacher groups. She explained:

> In terms of bringing people together to deal with their anxiety and strengths and inadequacies— throwing everybody in a pot or a building together— that was definitely something I should have worked through.

Establishing a new school culture, traditions, and practices. The importance of a positive school culture was a consistent theme throughout all interviewees' descriptions of their work in their new high school. A complicating factor for Megan was the fact that the new Lakeside High School was situated in the same facility and campus as the dissolved Gotham City High School, and 70% of the faculty were former Gotham City teachers. Megan said that Metropolis teachers felt they were moving "into Gotham City teachers' territory." This undercurrent was apparent throughout the year when decisions were reached about school policies and procedures. Because the majority were former Gotham City School District employees, as was Megan, many of their policies and procedures became Lakeside High School policies by default. As the school year progressed, Megan observed that the former Metropolis High School teachers became increasingly adamant that the few remaining policies should be decided by adopting "the Metropolis way…no matter what." Megan continually worked behind the scenes to smooth things out between two teacher groups, in a dialogue she sometimes described as "us versus them."

Another concern was the assimilation of students and faculty into the new high school culture. Abigail and Chase, in their first interviews, both reported that many teachers' attitudes toward their students who were from the "other" district were perceived as negative and condescending. Even though it appeared that the students had accepted the school consolidation, they still maintained some allegiance to their former schools. Chase observed:

> You see a kid taking their senior pictures in a football jersey from GCHS, and a football jersey from Lakeside High School, and from Metropolis. There's just a difference in it, and it made me sad. But is just…this feeling like they don't want to let go.

Although the two high school administrators understood the issues in facilitating a school consolidation, they also were concerned that they would be perceived as taking sides with the Gotham City or Metropolis camps, as opposed to expending their energies on forging a new identity.

Compounding the development of a shared teaching and learning culture, teachers from the two closed schools were perceived to have had differing expectations for academic performance. Gotham City was known to be "the elitist district," explained Megan, with higher academic standards and higher proportions of students excelling in honors courses. The Gotham City High School grading scale required a minimum average of 94% to earn a grade of A, which was lower than the Metropolis scale. In March, when the Lakeside High School grading policy proposed 90% would be required for an A, many teachers and parents perceived this as reducing academic standards. This proposal resulted in a contentious school board meeting, with numerous parents expressing opposition to the new grading policy.

The academic differences of the two closed schools became painfully apparent at the end of the year, when valedictorians and salutatorians were to be named. Due to the school's recent consolidation, the principals reached the decision to share the academic honors, selecting co-valedictorians and co-salutatorians from each closed high school. Megan experienced an ethical dilemma, because the two top Gotham City students were "not even in the top few" of the overall Lakeside High School senior class. Observing that there was

"a complete and total difference" in academic performance of students from the two former high schools, Megan struggled with developing a building-wide culture in which all teachers had consistent beliefs and expectations for student learning.

Discussion

This case study reinforces findings from prior studies concluding that school leaders must attend to substantial managerial duties when engaged in a district consolidation to ensure that the new organization functions effectively (Alsbury 2008; Nitta, Holley, and Wrobel 2010; Self 2001). Researchers have highlighted the principal's important role as learning leader and documented the increasing complexity of this position (Hallinger and Heck, 2010; Knapp et al. 2006; Louis et al. 2010; Grubb and Flessa, 2006). Important duties of the principal during the implementation year include addressing the school's structure; developing trusting, collegial relationships among stakeholders (e.g., students, teachers, staff, parents) who are brought together from the closed schools; and working to create a unified organizational culture while honoring vestiges of the dissolved schools. These issues must be successfully negotiated with all relevant parties while the principal simultaneously is attempting to maintain a focus on student learning, including developing a shared vision of student academic performance, creating shared expectations for teaching and learning, reviewing the curriculum, developing uniform grading policies, and guiding the faculty in developing common assessments. In today's accountability era, the principal cannot ignore student achievement issues, even when other urgent issues compete for attention.

This study was informed by the leadership for learning framework of Knapp et al. (2003), which is based on five action points that learning-focused leaders address, including establishing a focus on learning; building professional communities; engaging external environments; acting strategically and collaboratively along pathways of activity aimed at different aspects of student, professional, and system learning; and creating coherence. As was observed in this study, the principal experienced numerous hurdles as she attempted to function as Lakeside High School's learning leader. In this section, we discuss selected findings that influenced her effectiveness during the school's first year of operation. These include the following themes: addressing board micromanagement and school governance concerns, creating opportunities for open dialogue, and creating a unified school culture.

Addressing Board Micromanagement and School Governance Concerns

The governance process can create procedures that allow stakeholders to gather and influence information, process complex information, make good decisions, and act on those decisions (DuFour et al. 2010; Knapp et al. 2003). Stakeholders must be allowed to engage in the governance process, which requires trust on the part of the principal, teachers, district administrators, and school board. A notable challenge in this case was teachers' lack of trust in the school board because they experienced repeated board interference in school affairs, which resulted in marginalized decision-making practices at the district and building levels. As Louis et al. (2010, 41) noted, "It matters a great deal whether participants in an organization trust the decision-making capacity of the organization's leaders." Participants viewed board micromanagement as an intrusion into their areas of responsibility, noting that reactionary policies were adopted and that board members often were actively and inappropriately engaged in implementing policies. Policy implementation is a function of the school district and building administration rather than of the board (Land 2002).

Distributed leadership has been advocated (Louis et al. 2010; Spillane, Halverson, and Diamond 2001) as a mechanism to involve faculty in school decision making, shared leadership responsibilities, and building of faculty skills and capacity as organizational leaders. Because the principal was consumed with the managerial/structural demands inherent in forming the new school, she initially did not engage others in leadership roles. Although an assistant principal had been hired, she was unaccustomed to sharing administrative duties with another colleague and did not fully engage her building leadership team. The ability to empower teachers around formal leadership roles has been found to have a significant association with improved professional learning in collaborative settings, individual teacher learning, and collective leadership (Leithwood and Mascall 2008). Principals can develop a shared culture by extending "significant decisional influence to others" (Louis et al. 2010, 35), motivating teachers, and providing roles for teacher leaders to provide instructional support to their colleagues.

Importance of Creating Opportunities for Open Dialogue

The building leader must consistently communicate the centrality of student learning throughout the organization, an obligation that Louis et al. (2010) described as a core leadership practice. Knapp et al. (2003, 21) also noted that "leaders tell and show others repeatedly that learning and particular aspects or areas of student learning are the shared mission of students, teachers, administrators, and the community." The degree to which the principal effectively communicates either can build and maintain trust or can create roadblocks and distrust for followers. Some faculty members perceived that the principal was selectively providing information to them, primarily in private conversations with individual teachers. Because faculty meetings often were cancelled, and the principal routinely missed critical meetings, limited opportunities were being provided for the faculty to engage in open dialogue and group problem solving. One consequence of this inadequate communication was a growing chorus of faculty dissenters who began to vocally question the principal's leadership practices.

As the school year wound down, the principal began to involve key faculty members on the building leadership team and invite faculty to take key roles with professional development. However, these efforts to more fully engage the faculty in dialogue were perceived as "too little, too late."

Creating a Unified School Culture

Although the conception of culture is unique to each local context, culture generally has been defined as the beliefs, values, assumptions, and institutional norms that guide how people work in an organization (Schein 2004). McGuire et al. (2009, 6) described the goal of culture change as work "to purposefully and actively build capability for new ways of working." Shaping the building's culture must be intentional as culture begins to be communicated by what people value. Establishing a positive culture in a newly consolidated school is a challenging process because it requires integrating faculty and students from two or more dissolved school organizations who bring their ingrained institutional norms and assumptions with them as they collectively develop a new organizational culture. In this case, the process of developing the Lakeside High School culture was complicated by the fact that the principal and 70% of the faculty had worked together in one of the closed schools, leaving the remaining 30% of the faculty feeling as if they were being simply absorbed into the dominant belief systems and practices of their colleagues. Additionally, academic expectations varied within the two closed schools, creating conflicting academic expectations among the teachers and parents when the consolidated school was formed. Unfortunately, the principal did not give sufficient thought to the importance of unifying the faculty and staff into a cohesive group.

Implications

This study provided several insights into the impact of a school district consolidation on a high school principal's ability focus on learning. These revolve around the role of school boards in newly consolidated school districts, communication during the initial year of consolidation, and principal effectiveness.

As was noted previously, the school board in a newly consolidated school district plays a critical role in the development of the governance structure and philosophy for enacting and implementing district policy. The school board must develop a vision for the new district based on the shared beliefs and core values of internal and external stakeholders. At the same time, school board members must be mindful of their responsibility to enact policies while that of the superintendent, central office administrators, and principals is to implement them. Clear lines of authority must be established and honored so that school leaders feel that their decisions are being supported, particularly during a time of transition. As the lead administrator, the superintendent can help to educate the new board members on their roles and responsibilities. If the board becomes involved in the day-to-day operations of schools and the district, administrators may feel that their decision-making authority is being questioned while faculty and students may perceive that the board is losing confidence in the administrative team.

The second implication relates to the challenges that can occur when sustained communication does not occur during the initial year of consolidation. The principal must ensure that numerous, sustained opportunities for dialogue and communication are provided to all stakeholders,

including faculty, staff, students, and parents. Although communication may emanate from the school administration, two-way communication channels also should be developed so that faculty, students, and stakeholders can voice concerns, recommend solutions, and engage in continued conversations as the new organization takes shape. Principals must build collective capacity around feedback loops. This feedback must be balanced and inclusive of areas of strength and success as well as opportunities for change. If the newly combined faculty is not provided with opportunities to develop relationships, conflicts may occur between faculty groups from the dissolved schools, as well as among students, because they have not developed a shared understanding of their functions and practices within the new school.

Third, as challenging as it may be, the principal must use effective leadership practices to focus on student learning from the onset of the school's formation. Current demands for accountability require a continued focus on student achievement, such that school administrators and teachers cannot ignore curriculum, instruction, and assessment practices. Providing time for collaboration is necessary so the faculty and administration can form a cohesive group, engage in curriculum conversations, and address student learning needs. The challenging nature of continuous improvement requires the principal to lead strategically, identifying issues to address, and distributing leadership responsibilities across faculty members who have the capacity and skills to assist with these important tasks (Elmore 2002). Given the expanded responsibilities to develop the culture, norms, policies, and procedures for the newly consolidated school, the principal can easily become overwhelmed, and therefore may overlook the responsibility of serving as the school's learning leader.

Conclusion

Clearly, a principal who is charged with leading the consolidation of two high schools into one restructured school is faced with many complex, competing responsibilities. As was discovered in this case, even when an experienced principal is at the helm of the newly reconfigured school, it can be quite challenging to integrate two distinct groups of students and teachers into one unified organization. As Megan, the Lakeside High School principal, was designing the new school structure, she simultaneously was negotiating the political realities of functioning within the new district organization—to understand her roles, responsibilities, and working relationships with her district administrators, the new school board, and faculty. Her time was consumed with the structural and managerial elements of forming the new school in its initial year of existence: creating policies, rules, and procedures, and managing student discipline issues. Due to her intense focus on these elements, it was difficult for her attend to other factors that also were vital to the school's formation, such as engaging teachers in team-building activities to bring them together into a cohesive group, maintaining ongoing communication and opportunities for faculty dialogue, developing a shared vision of student learning with faculty and students, attending to the formation of a positive school culture, and leading

faculty conversations about teaching and learning. Reflecting on her performance as the school year concluded, Megan lamented that she had been narrowly focused on operating in "survival mode" throughout the academic term and had not embraced her critical role as learning leader. As the academic year was winding down, she began to refocus on teaching and learning, as well as to involve members of the building leadership team in assuming some curriculum leadership responsibilities. Looking back, Megan realized that she needed to simultaneously focus on both the managerial and leadership for learning aspects of her position throughout this initial year.

This case study illuminates several challenges that may be faced when leading a consolidated school and, hopefully, can provide some guidance to assist the principal with concurrently attending to forming the school culture, addressing structural elements of the new organization, and continuing to focus of student learning during the challenging first year of consolidation.

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Endnotes
1. No Child Left Behind Act of 2001, 20 U.S.C. §§ 6301-7941 (2006).
2. Pseudonyms were used for the names of the high schools, school districts, and all participants.

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Education Funding and Student Outcomes: A Conceptual Framework for Measurement of the Alignment of State Education Finance and Academic Accountability Policies

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The conceptualization and measurement of education finance equity and adequacy has engaged researchers for more than three decades. At the same time, calls for increased academic accountability and higher student achievement in K-12 public education have reached new levels at both the national and state levels. Aligning these represents an emerging area of research with many challenges. For example, recent efforts by the authors to measure the alignment of fiscal equity and student outcomes using an equity ratio faced challenges, particularly because traditional education finance statistical measures do not fully account for factors that either impeded or contributed to their alignment.[1] Hence, the purpose of this article is to expand upon our previous work not only by identifying contributing factors, but also by proposing a conceptual framework that explains their role in measurement and alignment of state education finance and academic accountability policies.

In this article, we first review the process we used to create an equity ratio used to measure alignment. We then turn to our subsequent and related research to identify relevant contextual factors. Based upon these studies, we propose a conceptual framework that illustrates the interrelationship of factors associated with the alignment of education finance and accountability policies.

Refining and Testing the Equity Ratio

In 2013, we proposed an equity ratio to measure the alignment of education finance systems with measures of student performance described in accountability policies for the states of Kentucky, Massachusetts, and New York (Knoeppel and Della Salla 2013a). Our inquiry was guided by the question: Given equitable resources or finance inputs, what is the level of equity in educational outcomes? Rather than relying upon measures such as achievement gaps and student performance trend data, we suggested that a statistic that included the use of measures of distribution and dispersion of student performance outcomes was more appropriate. We proposed a three-step process to calculate an equity ratio that involved the measurement of finance inputs

and accountability outcomes, and the relationship between them. We used the coefficient of variance to discern the equity of both funding inputs and measures of student achievement, and included a discussion establishing standards of equity.

The coefficient of variance measures the amount of variation around the mean and ranges from zero to infinity—a value closer to zero, such as 0.10, is generally accepted as an equitable distribution of funds. The measure is calculated by dividing the standard deviation of a distribution by the mean value. Reasoning that an equity standard of 0.10 for the coefficient of variance of finance systems was too large and allowed for too much variation around the mean, we suggested that the standard should be reduced to 0.05. Next, guided by the notion that an equitable distribution of student achievement would be nonnormal and leptokurtic per Figure 1,[2] we proposed a coefficient of variance of .03 for measures of student performance. In our estimation, this represented an ideal distribution of student achievement that would best measure the success of a state's consequential academic accountability policy defined as student achievement at the "proficient" level.[3]

Figure 1 | **Ideal student performance distribution**

⇧
Proficient
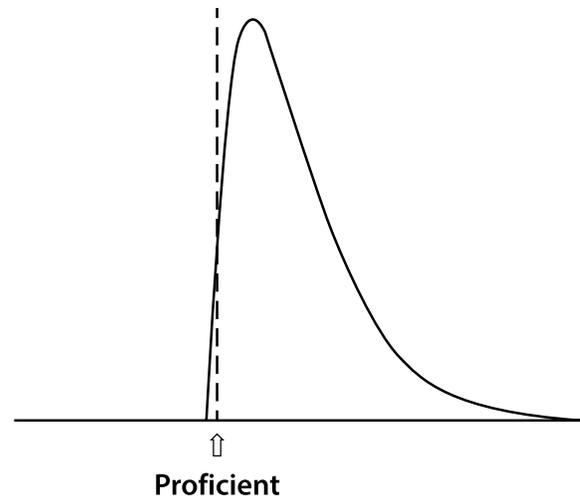
Table | **Summary of Research on the Alignment of State Education Finance and Academic Accountability Policies**

Title	Authors	Contextual Factors	States	Findings	Implications
Measuring Equity: Creating a New Standard for Inputs and Outputs	Knoeppel and Della Sala (2013a)	Testing of equity ratio and accounting for differing levels/rigor of proficiency in each state	Kentucky Massachusetts New York	A universal equity ratio is difficult to interpret for all states. There are other factors involved.	Equity ratio must be analyzed in accordance with judicial interpretations and other policy components in each state.
Finance Equity, Student Achievement, and Justice: A Five-State Analysis of Equality of Opportunity	Knoeppel, First, Della Sala, and Ordu (2014)	Judicial interpretations	Colorado Massachusetts New York Ohio Washington	Interpretations of opportunity in the courts matter in how equity of funds and achievement are conceptualized by policymakers and researchers.	Researchers must account for components of finance and accountability policies as well as timing of implementation of both policies.
Measuring The Alignment Between States' Finance and Accountability Policies: The Opportunity Gap	Della Sala and Knoeppel (2015)	Student demographics and state socioeconomic contexts	Colorado Kentucky Massachusetts Minnesota New York Ohio South Carolina Texas Washington	Social/economic context helps researchers discern the degree to which opportunity is difficult to obtain in each state.	There is a need for a conceptual framework to include all contextual factors that affect the alignment of both policies.

We conceptualized the equity ratio as a simultaneous measurement of finance inputs and student performance outcomes. The equity ratio was calculated by dividing the coefficient of variance of student achievement by the coefficient of variance of the equity of finance inputs, as follows: Equity Ratio = $CV_{achieve}/CV_{finance}$. Using this metric, we established the ideal range for the equity ratio between zero and 0.6. However, because it is possible to achieve an equity ratio in the ideal range without having an equitable finance system or measure of student achievement, we concluded that the equity ratio would only be valid if the coefficient of variance for finance inputs and student achievement outcomes approached 0.05 and 0.03, respectively. We also suggested a post hoc analysis that included measures of the mean, kurtosis, skew, McLoone and Verstegen indices, as well as statewide contextual factors to draw final conclusions about the equity and alignment of these two policies.

During development of the equity ratio, we realized that several factors that could not be accounted for by using equity statistics could impact the degree of alignment between finance and accountability policies, meriting further inquiry to determine the usefulness of the equity ratio. In order to test and improve the equity ratio as well as determine factors that were associated with the alignment of both policies, we expanded the scope of our research (Knoeppel et al. 2014; Della Sala and Knoeppel 2015). As can be seen in the summary table, these two studies served as part of the process of isolating contextual factors. Based on the findings, we were able to account for more factors, hence improving the external validity of the equity ratio.

In our 2013 study, we found that the equity of student performance was impacted by the rigor of the assessments; specifically, student achievement levels were influenced by the difficulty of content associated with each state's definition of proficiency. Although Kentucky was found to have the highest level of equity in finance and student performance, state accountability standards were rated as either basic or below basic by the National Assessment of Educational Progress (NAEP). We found that Massachusetts had the most rigorous standards—mathematics scoring was consistent with NAEP's definition of proficiency while reading scoring differed. It was consistent with NAEP's definition of basic rather than proficient performance. Despite the relatively higher level of rigor in Massachusetts, the equity of student performance in reading and mathematics was found to be above our 0.03 standard. Lastly, New York had a high degree of equity in measures of student achievement, but their performance standards were found to be the least rigorous; that is, their scoring schema in both content areas was below NAEP's definition of basic. None of the three states achieved the standard of education finance equity we set, although Kentucky was closer than Massachusetts and New York. In considering alignment, we relied heavily on the language of the 1989 *Rose* decision that mandated "substantial uniformity" in both finance and student achievement (*Rose v. Council for Better Education* 1989).

We next examined the language of state statutes and judicial interpretations in Colorado, Massachusetts, New York, Ohio, and Washington to discern how each state defined opportunity (Knoeppel et al. 2014). Using Betts and Roemer's (2005) theoretical framework of equality of educational opportunity,[4] we used a quasi-experimental design to: (1) analyze court decisions and statutory language; (2) calculate the equity of the finance system; (3) calculate the equity of measures of student performance; and (4) calculate the equity ratio and perform post hoc analyses to provide clarity about the shape of the distributions for each of the states.[5] Courts in these states defined opportunity as student performance on state criterion-referenced exams. Each state court specified equal student performance outcomes and the provision of resources as conditions that were to be met in order for the state education finance system to be deemed constitutional. Because none of the states examined in the study achieved both finance and student performance equity, we concluded that there was no policy alignment. We proposed that the timing of the implementations of both policies was a contributing factor to the lack of alignment. Unlike Kentucky, where a new finance distribution model was adopted the same year as the adoption of criterion-referenced student performance standards, none of the states in this study adopted finance distribution models in the same year that the state education accountability policy was adopted.

Reasoning that the alignment of finance and accountability policies was not only impacted by different definitions of opportunity or funding weights for differentially situated students, we sought to understand the challenges in the provision of opportunity faced by states based on variations in economic conditions and demographics (Della Sala and Knoeppel 2015). We noted that the conceptualization of the equity ratio did not allow for the consideration of mediating factors that impacted the provision of opportunity and suggested that a broader analysis of these factors should be used to support changes to resource distribution models in support of accountability goals. To calculate a metric, or "opportunity gap" to measure the degree of misalignment between the equity of states' education finance systems and student performance outcomes, we used census data and district level finance and performance data from nine states: Colorado, Kentucky, Massachusetts, Minnesota, New York, Ohio, South Carolina, Texas, and Washington.

We placed these states into groups of three based on demographic characteristics and need. Need was defined as low median household income, a larger percentage of people living below the poverty level, and a high unemployment rate. States with the greatest need included Ohio, Kentucky, and South Carolina while states with moderate need were identified as Washington, New York, and Texas. States with low need were Minnesota, Massachusetts, and Colorado. Census data used in the study included student demographics (e.g., race and students qualifying for services like special education, English language learner (ELL) programs, and free and reduced-price meals), graduation rate, percentage of individuals with a bachelor's degree or higher, and the major industry in the state other than educational and health

services.

We computed equity statistics for each state to include the coefficient of variance, McLoone and Verstegen indices, and the equity ratio in addition to looking for patterns based on student demographics and need. None of the states under study were found to have aligned finance and accountability policies according to the equity ratio; patterns describing the equity of finance systems and measures of student achievement were inconclusive. Only two states, South Carolina and Kentucky, were found to have equitable finance distribution systems; both of these states were characterized as high needs states. In the states with the least need, Massachusetts was found to have performance equity in both reading and mathematics while Colorado had performance equity in reading and was approaching performance equity in mathematics. Minnesota was well below the standard of equity in performance with a coefficient of variance of 0.28. In states with moderate need, New York and Texas provided performance equity in both reading and mathematics while performance equity was not found in Washington. In states with the greatest need, none was found to have performance equity. Based on the opportunity gap, we placed states in four categories: (1) approaching alignment; (2) input equity; (3) output equity; and (4) inadequate systems (neither input nor output equity). In our analysis, we found that only Kentucky approached policy alignment. South Carolina was found to have input equity while Colorado, Massachusetts, New York, Texas, and Washington were found to have output equity. Ohio and Minnesota were found to have inadequate systems.

In summary, the two subsequent studies that were conducted to refine and test the external validity of the equity ratio revealed six interrelated contextual factors that were found to impact the alignment of education finance and academic accountability policies: (1) judicial interpretations in school finance litigation; (2) components of academic accountability policy; (3) components of education finance policy; (4) the timing of finance and accountability policy implementations; (5) student demographics and state socioeconomic contexts; and (6) other factors not captured by academic accountability policy but associated with schooling. The next section expands upon each of these factors.

Factors Impacting the Alignment of State Education Finance and Accountability Policies

Judicial Interpretations in School Finance Litigation

Judicial interpretations of education clauses in state constitutions have informed equity and adequacy lawsuits. These class action suits have led to recommendations for reform, not only in education finance but also, in some cases, in academic accountability. Specifically, we posit that courts can define opportunity as inputs-based, outputs-based, or a combination of both. In the states we examined, opportunity was defined as the achievement of proficiency standards (outputs) and the provision of sufficient resources to help students realize those content standards (inputs).

Components of Academic Accountability Policy

Our investigation of the language of state academic accountability policy revealed two components that can impact the alignment of finance and accountability policy. These were the state's definition of academic proficiency and the range of scores used on the state's student performance accountability assessment to measure proficiency. Since comparisons across states cannot be made due to the use of different tests and performance standards, we compared those states we studied to NAEP (McLaughlin et al. 2008: Bandeira de Mello, Blankenship, and McLaughlin 2009; Bandeira de Mello 2011). In turn, the equity ratio is influenced by how states define proficiency standards. Similarly, the range of possible scores on state assessment has an effect on the coefficient of variance for student performance outcomes; that is, a state's academic accountability policy affects the degree to which the equity ratio correctly measures the alignment between finance and accountability policy.

Components of Education Finance Policy

Some assert that little has changed in the way that states allocate revenues in support of public education (Verstegen and Jordan 2009; Verstegen 2014; Verstegen and Knoeppel 2012). Foundation programs continue to be the revenue distribution model in the majority of states, sometimes in combination with another form of general aid. However, it should be noted that pupil weightings can be used with foundation plans to direct additional funds to particular groups of students who may need more resources to be academically successful. These include students living in poverty, those with disabilities, and students for whom English is not their first language, also referred to as English language learners (ELLs). At the same time, the level of state funding for education is decided in the political arena, where there are many competitors for limited resources, rather than on a rational cost basis.

Timing of Education Finance and Academic Accountability Policy Implementation

In our research, we found that implementation of both of these policies at the same time had a strong positive impact on their alignment. In measuring the degree of alignment, we found Kentucky to have the smallest gap. Kentucky enacted the Kentucky Education Reform Act of 1990 (KERA) immediately following the 1989 *Rose* decision. KERA included both the creation of an education finance system and a new academic accountability policy. Their simultaneous development and implementation resulted in greater alignment between resource allocation and student achievement than the other four states in our 2014 study whose foundation programs were enacted before their respective accountability policies. Only Massachusetts made changes to both their accountability policy and changes to their finance distribution model, which may account for the equitable results in their measures of student achievement. As a result, we postulated that gaps in time between implementation of these policies indicated a lack of policy coherence, and hence would impact the equity ratio.

Student Demographics and Socioeconomic Contexts

In our 2015 study, we sought to expand our understanding of the equity ratio by examining both the equity and alignment of finance and accountability policies in relation to student demographics and socioeconomic factors using census data and district level finance and performance data for nine states (Della Sala and Knoeppel 2015). Although the findings with regard to equity were mixed, a few patterns emerged that have informed the development of our conceptual framework. First, wealth of the state strongly impacted student performance equity and other outcomes to schooling such as the percentage of individuals holding a bachelor's degree. Other demographic factors, such as race, percentage of students with individualized education plans (IEPs), and the percentage of students receiving special education services appeared to negatively impact the equity of performance. It would appear that the impact of these demographics on equity and alignment is mediated by the definition of the standard of proficiency. Although many of the states under study had academic performance equity or were approaching that standard, all, with the exception of Massachusetts, used the NAEP definition of "basic" or "below basic" to define proficiency, and only two states had students performing at or above proficiency in the aggregate.

*Other Factors Not Captured by Academic Accountability Policy but Associated with Schooling*

In two studies published in 2013, we took a different approach and examined the efficiency of allocation patterns of schools in Kentucky and South Carolina, using data envelopment analysis (Della Sala and Knoeppel 2013; Knoeppel and Della Sala 2013b).[6] Economic efficiency research models use a mix of inputs to maximize outputs, using multiple measures. The use of a single output, such as scores on state-mandated criterion-referenced tests, would likely be considered insufficient. For example, additional outcome measures, such as college-going rate and career readiness, might more fully capture the education production function. In addition, although schools may have high scores on these tests, they may still be considered inefficient because the test scores could be viewed as a minimum standard.[7]

A Conceptual Framework to Explain the Factors Impacting Policy Alignment

According to Maxwell (2005, 44), there are four main sources used in the construction of a conceptual framework: the experiential knowledge of the researchers themselves; existing theory and research; exploratory research of the researchers; and thought experiments. Our framework, depicted in Figure 2, is based upon experiential knowledge.

The conceptual framework begins with a consideration of judicial interpretations in school finance litigation. Where plaintiffs have prevailed, court decisions have resulted in requirements for reform of the education finance system, generally along the lines of providing greater equity or adequacy--or both. Some courts extended their scrutiny to academic accountability as well, resulting in either the adoption of new accountability policies to include a system of assessment or a review of the current accountability

Figure 2 | **Conceptual Model of Factors Associated with the Alignment of Finance and Accountability Policies**
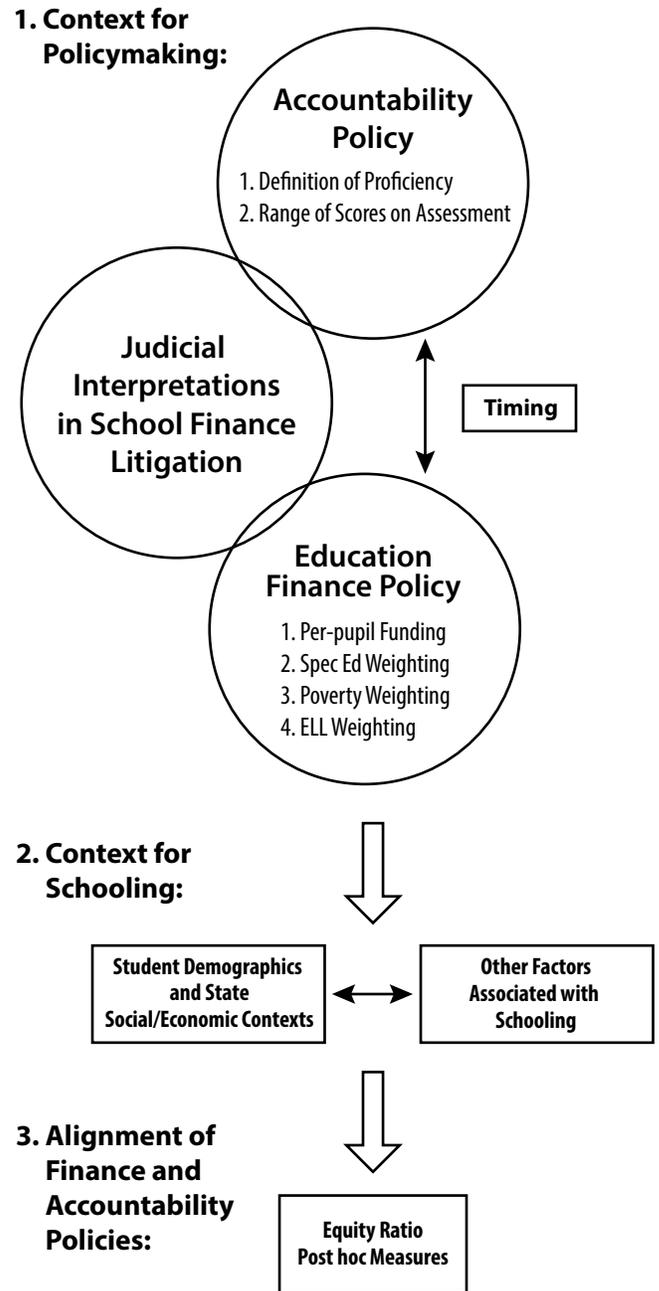
policy and a conclusion of the degree to which that system measured opportunity as defined by student achievement measures. As noted in the conceptual framework, the timing of the enactment of the accountability and finance policies also impacts the degree of alignment found between the policies. The next set of factors relates to the context for schooling. Student demographics and socioeconomic variables can be a powerful influence on the degree of alignment of education finance and academic accountability.

Summary and Conclusion

Previous research has discussed the need for alignment of state education finance and academic accountability. The equity ratio represents one method to measure the degree of policy alignment. It was initially developed using language from judicial interpretations of the constitutional duty to provide a system of public education in Kentucky and then applied to Massachusetts and New York. The equity ratio was sensitive to factors that could not be measured using equity statistics, suggesting the need for further research to discern those factors that impact policy coherence. Efforts to refine the equity ratio and to improve its external validity revealed six interrelated contextual variables that allowed for the development of the conceptual framework proposed in this article.

This proposed conceptual framework is the result of a series of inquiries centered on the conceptualization, development, and testing of the equity ratio. Although the research described in this article led to the development of a specific conceptual framework, this does not mean the research on the alignment of finance and accountability policies is complete. Further research is needed on factors within the framework and the degree to which those factors influence the alignment of both policies. Additionally, the metrics described in this paper need to be applied to more states to improve external validity. The conceptual framework outlined in this article provides a starting point for researchers and policymakers to examine the alignment of state-specific education finance and academic accountability policies to better provide equal and adequate educational opportunities for all students.

Endnotes

[1] For a listing and discussion of traditional education finance statistical measures, see "Statistical Approaches to Equalization," in *Financing Education in a Climate of Change*, 11th edition, by Vern Brimley, Jr., Deborah A. Verstegen, and Rulon R. Garfield (Boston, MA: Pearson, 2012), 65-68.

[2] Also referred to as positive kurtosis, or skewing of the mean.

[3] Kress, Zechmann, and Schmitten (2011) defined "consequential" accountability as a model of education reform that includes explicit standards for students, testing students based on their knowledge of standards, and consequences assigned to schools for failure to meet those standards.

[4] Per Knoeppel et al. (2014, 814): "They [Betts and Roemer 2005] reasoned that opportunity is comprised of five components: circumstances, type, effort, objective, and instrument. Type includes the set of individuals with the same circumstances and objective refers to the actual condition that is to be equalized. Student demographics are an example of circumstances; students in similar circumstances are then grouped into types. The instrument, or state finance distribution model, is the intervention or policy used to equalize the condition. As a result of equalization, effort, or the willingness to fully fund an adequate education would then determine the objective, which is student outcomes. Outcomes may be unequal, yet they cannot be the result of the state's unwillingness to adequately fund public education. Conversely, unequal outcomes may be permissible if all students achieve at or above proficiency. Indeed, one goal of education finance policy is to equalize opportunities for students, yet different definitions of 'what' is to be equalized may result in different conceptions of finance policy and equality of educational opportunity."

[5] The study (Knoeppel et al. 2014, 817) was described as quasi-experimental in the sense that: "The selection of these five states enabled researchers to conduct a case-by-case study comprising geographic diversity as well as diversity in the year of each respective decision."

[6] Della Sala and Knoeppel (2013, 44) described their use of data envelopment analysis (DEA) in this study as follows: "DEA was employed to calculate and examine the relative efficiency of the high schools [in one Midwestern urban school district]. DEA is a non-parametric linear programming model, primarily used in economic research, which accommodates multiple inputs and outputs to construct an efficiency frontier (Ray, 2004). The model supposes a plausible connection between inputs and outputs within Decision-Making Units (DMUs) or, for this study, high schools, in order to measure production (Stiefel, Schwartz, Rubenstein, & Zable, 2005). DEA builds an efficiency frontier in relation to the observed inputs and outputs in the data (Robst, 2001). Therefore, a school's efficiency is calculated based on the production of only the schools included in the analysis rather than an established 'ideal' efficient school." A similar definition was used in Knoeppel and Della Sala (2013b).

[7] In terms of future research, we would argue that an aligned system of education finance and academic accountability policy incorporate efficiency as well.

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Teacher Quality and Sorting across Traditional Public and Charter Schools in the Detroit Metropolitan Region

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Introduction

In the quest to raise student achievement in low-performing urban schools, researchers often point to the central importance of recruitment and retention of a high quality teacher workforce (Lankford, Loeb and Wyckoff 2002; Rivkin, Hanushek and Kain 2005; Jacob 2007).[1] At the same time, advocates have proposed charter schools not only as a means to reform traditional public schools, but also as a strategy to close the achievement gap between urban students and their suburban counterparts in no small part because charter schools are often freed from many of the constraints faced by traditional public schools, allowing them greater flexibility to recruit and retain a qualitatively different teacher workforce (Center for Education Reform n.d.).

Using data for the Detroit metropolitan region of Wayne, Oakland, and Macomb counties for the 2005-2006 school year, this study sought to answer four research questions: (1) Did charter school teachers differ in measures of teacher quality from traditional public school teachers; (2) Was there variability in teacher quality within traditional public and charter schools; (3) To what extent were teacher quality indicators associated with teacher effectiveness; and (4) Did teacher sorting take place across charter and traditional public schools? This article is divided into eight sections. It begins with a background section on charter schools in Michigan, followed by a section on research on teacher quality and sorting. The third section presents research methods used in the study while findings are discussed in the next four sections, one for each of the research questions. The article closes with a summary, conclusions, and recommendations for future research.

Charter Schools in Michigan

The general concept of charter schools has been discussed in a large and growing research literature (Allen and Gawlik 2009; Archer 2000; Buckley and Schneider 2007; Bulkley 2004; Crawford 2001; Chubb and Moe 1990; Fuller 2000; Gawlik 2007, 2008; Hill, Pierce, and Guthrie 1997; Lyons 1995; McGree

1995; Miron and Nelson 2002; Nathan 1996; Reyes, Wagstaff, and Fusarelli 1999; Wohlstetter, Wenning, and Briggs 1995).[2] A core assumption of charter school advocates is that school autonomy and deregulation can raise teacher quality and student performance, particularly in high poverty urban areas where charter schools tend to be concentrated (Baker and Dickerson 2006). The extent to which charter schools are freed from state regulation and thereby differentiate themselves from traditional public schools, however, differs across states. For example, state charter school laws vary in terms of teacher licensure requirements; eligibility to seek a charter and/or operate a charter school; control of teacher contracts; public financing; and financial disclosure (Green and Mead 2004). State laws also vary with regard to collective bargaining rights of charter school teachers and other school employees. All of these can potentially influence teacher recruitment and retention.

Michigan became an early adopter of charter schools via Public Act 362 of 1993. Michigan law allows for three categories of charter schools: public school academies, chartered under Part 6A of the revised school code; urban high school academies, chartered under part 6C of the revised school code to operate within Detroit; and strict discipline academies, chartered under Public Act 23 of 1999 to serve suspended, expelled, or incarcerated youth (Michigan Department of Education 2010). Nearly all Michigan charter schools fall under the first category.

According to the Center for Education Reform, a charter school advocacy organization which annually ranks the "strength" of state charter school laws, Michigan was ranked fourth out of the 42 states which allowed charter schools in 2015 (Zgainer and Kerwin n.d.). The Center's criteria for a "strong" state charter law were: (1) no limits on the number of charter schools statewide; (2) no limits on the number of students who can attend charter schools; (3) no restrictions on the types of charter schools allowed (new starts, conversions, online schools); (4) eligibility of many different types of groups to apply to open charter schools; (5) exemptions/waivers from most school district laws and regulations; (6) funding equivalent to that of traditional public schools; and (7) fiscal autonomy (Zgainer and Kerwin n.d.).

Figure | **A Framework for Teacher Quality and Teacher Effectiveness**
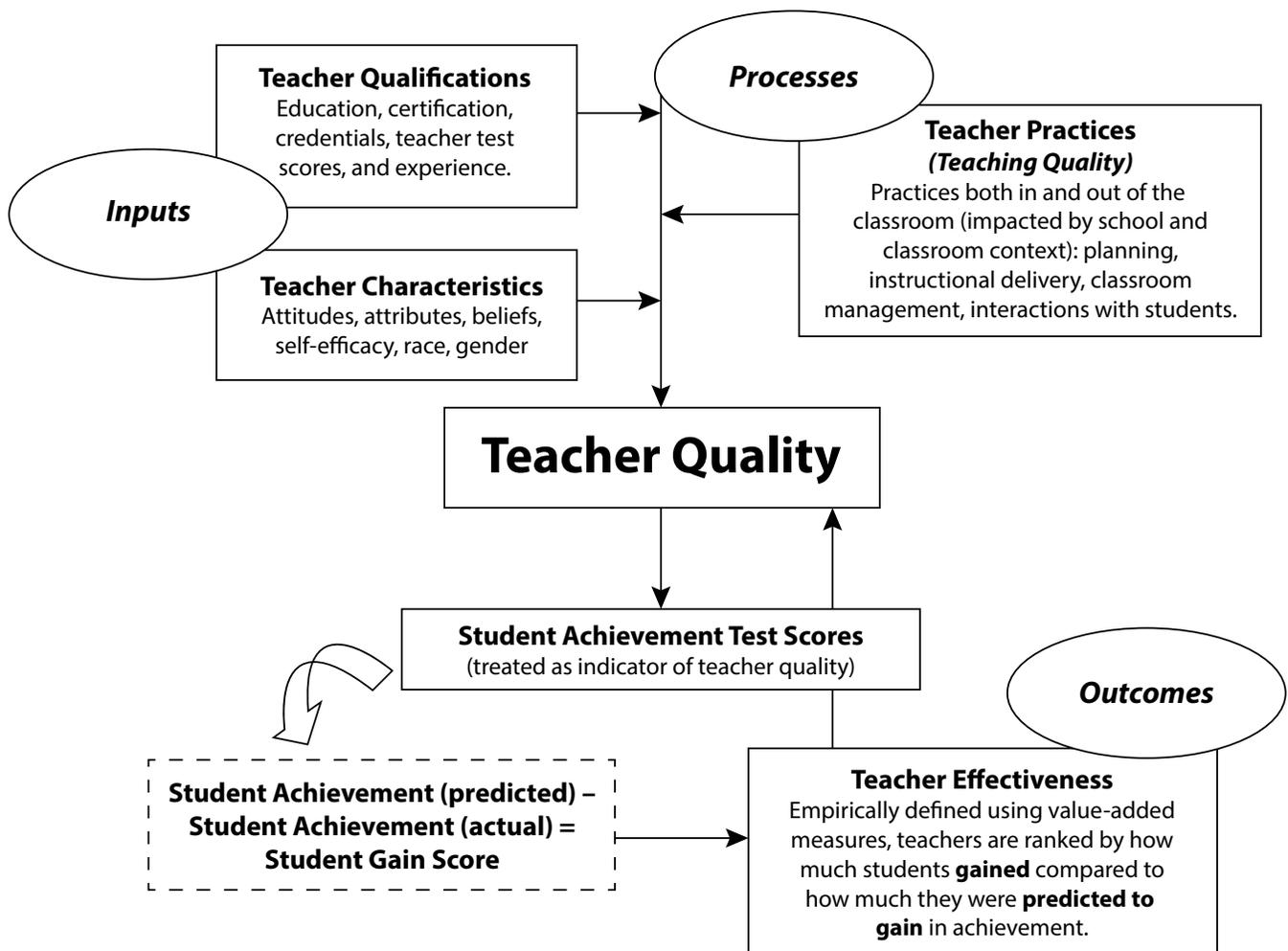
Source: L. Goe, *The Link Between Teacher Quality and Student Outcomes: A Research Synthesis* (Washington, DC: National Comprehensive Center for Teacher Quality, 2007), 9.

Background and Research on Teacher Quality and Teacher Sorting

The study presented in this article draws upon Goe's (2007) research-based conceptual framework to define teacher quality and teacher effectiveness. (See Figure.) In this framework, teacher quality is comprised of inputs and processes. Inputs are divided into teacher qualifications and teacher characteristics while processes are defined as teacher practices or teaching quality. Teacher quality thus defined is related to outcomes, where outcomes are defined as student achievement scores. In order to assess teacher effectiveness, scores are analyzed as to whether or not they meet certain criteria, such as, but not limited to, those associated with value-added approaches. Because some researchers as well as policymakers consider student achievement scores themselves an indicator of teacher quality, this phenomenon is also noted in the figure.

Little research exists on teacher characteristics as an input to teacher quality. Processes related to teacher quality, as described in the framework, are under-researched as well. Hence, this study focused on teacher qualifications for which there is a decidedly larger body of research although not necessarily one in unanimous agreement. As described in the framework, more common qualifications include academic background,[3] certification,[4] credentials, teacher test scores,[5] and experience.[6] Data for these are often more readily available to researchers and were so in the case of this study. For outcomes, Michigan, like most others states, administers annual, mandated achievement tests that assess student proficiency in key subject areas.

This framework embodies the hypothesis that increases in teacher quality are linked to increases in student outcomes and hence teacher effectiveness. However, an alternative hypothesis is found in the concept of teaching sorting; that is, more highly qualified teachers are attracted to schools and districts with higher achieving students. Overwhelmingly, such schools and districts are found in more affluent communities. The availability of these data in Michigan allowed for exploration of this hypothesis as well.

Methods

The population of traditional public and charter school teachers from the tricounty Detroit metropolitan region was used for the study. It consisted of 26,135 teachers,[7] distributed across 794 elementary and middle schools, including 23,171 teachers in 708 traditional public schools and 2,964 teachers in 86 charter schools. All data were for the 2005-2006 school year, the most recent year for which a complete data set could be assembled. High schools were omitted due to data and school coding limitations. Also, in 2005-2006, Michigan and the Detroit region had few charter high schools. The tricounty region is made up of Macomb, Oakland, and Wayne counties. The Detroit Public Schools, the largest in the metropolitan region is located in Wayne county. Table 1 provides a breakdown of traditional public and charter school teachers by county.

Table 1 | **Number of Traditional Public and Charter School Teachers by County for the Metropolitan Detroit Region**

County	Number of Teachers		
	Traditional Public School	Charter School	All
Macomb	4,784	234	5,018
Oakland	7,225	609	7,834
Wayne	11,162	2,121	13,283
Metro Region	23,171	2,964	26,135

Data Sources and Definitions of Variables

Six proxies for teacher quality, which are referred to in the analysis as teacher quality indicators, were selected for use in the study: (1) percent of certified teachers; (2) percent of teachers who graduated from a competitive college; (3) percent of teachers with a major or minor in their subject teaching assignment; (4) percent of inexperienced teachers; (5) percent of teachers holding substitute permits; and (6) teacher turnover. The state of Michigan's register of education personnel and personnel licensing system were the sources of data. The definitions below derived from these data sources.

Percent of certified teachers. "Teacher Certification (%)" is the percent of classroom teachers who hold a teaching certificate rather than a teaching permit. Specifically, it is the sum of the percent of classroom teachers with a provisional,[8] professional, or permanent certificate.[9]

Percent of substitute teachers. The second credential-based proxy for teacher quality is the percentage of teachers in each school working with a "substitute" permit, referred to in the data analysis as "Substitute Teacher Permit (%)." The substitute permit allows a school or district to employ a person who does not hold a valid Michigan teaching certificate on a day-to-day basis when the regular teacher is temporarily absent. This permit is not valid for long-term teaching assignments. The substitute teacher must have completed 90 credit hours of study at an accredited college or university.

Percent of teachers who graduated from a competitive undergraduate college. This variable is referred to as "Competitive College Grad (%)." For those teachers who graduated from a Michigan institution of higher education, the state register of personnel identifies their alma mater. For graduates of out-of-state institutions, only the state is reported. In this study, each Michigan graduate's college was ranked with regard to competitiveness using "Barron's Profile of American Colleges" (Barron's Educational Series, Inc. n.d.).[10] Institutions with a ranking between 1 and 5 were classified as most competitive, while schools ranked 6 through 9 were classified as least competitive.

Percent of teachers with an academic major or minor in their subject teaching assignment. "Teaching Subject Area (%)" represents the percent of teachers in each school with a major or minor in their subject teaching assignment.

Percent of inexperienced teachers. "Inexperienced Teacher (%)"is the percent of teachers in each school with fewer than three years of teaching experience.[11]

Percent of separated teachers. "Teacher Turnover (%)" is the percent of teachers who left a school during the 2005-2006 school year.[12] This variable is intended to capture school working conditions, climate, and stability.

This study also included measures of student poverty and school resources, as described below.

Student poverty. "Student Poverty (%)" is the percent of students eligible for free or reduced-price meals under the federal National School Lunch Program. The data source was the U.S. Department of Agriculture.

School district wealth. "District Wealth" is defined as per-pupil residential assessed valuation. In Michigan, it is referred to as state equalized valuation of homestead property. Note that this variable applies only to traditional public schools in the study as charter schools in Michigan do not have a property tax base.[13]

Instructional Spending. This variable represents total instructional spending per pupil.

Starting teacher salaries and salaries for teachers with a master's degree and ten or more years of experience were obtained from district collective bargaining agreements and individual charter schools. In the data analysis, these are referred to as "Starting Teacher Salary" and "Advanced Teacher Salary," respectively.

For student achievement, scores from the Michigan Educational Assessment program in Michigan Department of Education data files for the 2005-2006 school year were used. At grades 4 and 7, individual pupil scores were available in English language arts and mathematics. Individual pupil scores were aggregated at both school and district levels to provide the number and percent of pupils scoring at the "proficient" level.[14] In those schools that contained both grades 4 and 7, the percent of pupils who scored "proficient" in English language arts and mathematics at grades 4 and 7 were aggregated separately for each grade level.[15] In the data analysis, these variables are referred to as: ELA4 Proficient (%), ELA7 Proficient (%), Math4 Proficient (%), and Math7 Proficient (%).

Statistical Analysis

Descriptive statistics (minimum, maximum, mean, standard deviation, coefficient of variation), Pearson correlation, and tests of differences of means were used in the statistical analysis. Specifically, descriptive statistics and tests of differences of means were used to compare teacher quality indicators in charter schools and traditional public schools while the coefficient of variation was used to assess within group variation. Pearson correlation was used to determine to what extent teacher quality indicators were associated with teacher effectiveness; and to what extent teacher sorting took place across charter and traditional public schools. It is important to note that correlation coefficients indicate only whether two variables move in the same or opposite directions and the degree of linear association. Hence, causality cannot be determined.

Table 2 | **Comparison of Means of Variables for Traditional Public and Charter Schools**

| | Traditional Public | | Charter | | | Statistical |
Variables	Mean	N	Mean	N	F	Significance
Instructional Spending (Per Pupil $)	5,427	708	3,731	86	227.566	<0.001
Starting Teacher Salary ($)	38,575	712	35,807	73	71.600	<0.001
Advanced Teacher Salary ($)	74,669	708	69,726	23	14.286	<0.001
ELA4 Proficient (%)	74.86	531	53.53	73	102.352	<0.001
ELA7 Proficient (%)	65.43	208	56.35	56	8.767	0.003
Math4 Proficient (%)	78.73	531	59.22	73	80.323	<0.001
Math7 Proficient (%)	48.47	208	33.99	56	15.099	<0.001
Competitive College Grad (%)	8.92	691	13.75	79	17.717	<0.001
Inexperienced Teacher (%)	14.51	705	42.83	80	67.352	<0.001
Teacher Turnover (%)	4.84	705	12.08	80	256.396	<0.001
Student Poverty (%)	38.66	697	54.76	72	52.592	<0.001
Teaching Subject Area (%)	9.58	707	22.86	80	60.227	<0.001
Certified Teachers (%)	65.67	699	56.69	80	27.132	<0.001
Substitute Teacher Permit (%)	10.40	704	47.22	70	650.844	<0.001

Table 3a | Percentage of Inexperienced Teachers in Traditional Public and Charter Schools by County

	Minimum (%)		Maximum (%)		Average (%)		
County	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter	All
Macomb	0	16	61	95	22.66	59.44	24.08
Oakland	0	11	100	92	16.47	48.62	18.51
Wayne	0	0	100	100	9.93	39.82	14.27

Table 3b | Percentage of Inexperienced Teachers in Traditional Public and Charter Schools by County and Detroit Metropolitan Region: Standard Deviation

	Traditional Public	Charter	All
Macomb	10.63	30.70	13.78
Oakland	13.52	24.31	16.38
Wayne	13.11	22.61	18.19
Metro Region	13.71	23.93	17.30

Table 4a | Percentage of Teachers Graduated from a Competitive College in Traditional Public and Charter Schools by County

	Minimum (%)		Maximum (%)		Average (%)		
County	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter	All
Macomb	0	0	20	14	4.18	6.71	4.29
Oakland	0	2	52	54	11.42	16.23	11.73
Wayne	0	0	42	45	9.44	13.87	10.08

Findings I: Teacher Quality in Traditional Public and Charter Schools

A comparison of mean values for teacher quality indicators across traditional public and charter schools is found in Table 2. There were statistically significant differences in means for all of the indicators at the .001 level. On average, charter schools had much higher percentages of inexperienced teachers (42.83%) than did traditional public schools (14.51%), although a larger mean percentage of charter school teachers (22.86%) were teaching in subject areas where they held an undergraduate major or minor than were traditional public school teachers (9.58%). Charter school teachers also were more likely, on average, to have graduated from a competitive college, 13.75%, as opposed to 8.92% of traditional public school teachers. However, for certification, a higher mean percentage of traditional public school teachers was state-certified (65.67%) than charter school teachers (56.69%). In addition, the mean percentage of teachers with substitute teacher permits was dramatically higher in charter schools

(47.22%) than in traditional public schools (10.40%); and the mean percentage of teacher turnover in charter schools (12.08%) was higher compared with traditional public schools (8.92%).

Because the regional means may mask important county level differences, mean values for teacher quality indicators were analyzed in a more disaggregated format.[16] On average, charter schools in all three counties relied more heavily on inexperienced teachers than did traditional public schools. (See Tables 3a and 3b.) Charter schools in Macomb county had the highest average at 59.44% followed by Oakland county at 48.62% and Wayne county at 39.82%. Traditional public schools had much lower percentages: 9.93% in Wayne County, 16.47% in Oakland county, and 22.66% in Macomb county.

Charter school teachers in all three counties were somewhat more likely than their traditional public school counterparts to have graduated from a competitive college. (See Tables 4a and 4b.) On average, the percent of charter school teachers who

Table 4b | **Percentage of Teachers Graduated from a Competitive College in Traditional Public and Charter Schools by County and Detroit Metropolitan Region: Standard Deviation**

	Traditional Public	**Charter**	**All**
Macomb	4.53	5.43	4.58
Oakland	10.35	15.04	10.73
Wayne	9.45	11.05	9.81
Metro Region	9.31	11.63	9.67

Table 5a | **Percentage of Teachers with a Major or Minor in Subject in Traditional Public and Charter Schools by County**

	Minimum (%)		**Maximum (%)**		**Average (%)**		
County	**Traditional Public**	**Charter**	**Traditional Public**	**Charter**	**Traditional Public**	**Charter**	**All**
Macomb	0	5	17	50	3.03	21.57	3.03
Oakland	0	4	56	62	7.48	25.03	7.48
Wayne	0	0	100	80	13.58	22.48	13.58

Table 5b | **Percentage of Teachers in with a Major or Minor in Subject Area in Traditional Public and Charter Schools by County and Detroit Metropolitan Region: Standard Deviation**

	Traditional Public	**Charter**	**All**
Macomb	3.80	18.09	6.10
Oakland	8.92	14.21	10.24
Wayne	18.26	15.23	18.11
Metro Region	14.50	15.11	15.09

Table 6a | **Teacher Turnover: Percentage of Teachers Leaving Traditional Public and Charter Schools by County 2005-2006**

	Minimum (%)		**Maximum (%)**		**Average (%)**		
County	**Traditional Public**	**Charter**	**Traditional Public**	**Charter**	**Traditional Public**	**Charter**	**All**
Macomb	0	0	19	19	4.45	6.58	4.54
Oakland	0	0	50	26	4.02	14.00	4.65
Wayne	0	0	100	80	5.49	12.18	6.46

Table 6b | **Teacher Turnover: Percentage of Teachers Leaving Traditional Public and Charter Schools by County and Detroit Metropolitan Region 2005-2006: Standard Deviation**

	Traditional Public	Charter	All
Macomb	4.40	7.99	4.57
Oakland	5.11	7.52	5.81
Wayne	8.16	13.34	9.38
Metro Region	6.73	12.22	7.77

Table 7a | **Percentage of Teachers Holding a Permanent or Professional License in Traditional Public and Charter Schools by County**

	Minimum (%)		Maximum (%)		Average (%)		
County	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter	All
Macomb	0	40	100	89	69.58	58.95	69.16
Oakland	33	40	100	77	66.19	60.64	65.84
Wayne	0	0	100	93	63.74	55.54	62.55

Table 7b | **Percentage of Teachers Holding a Permanent or Professional License in Traditional Public and Charter Schools by County and Detroit Metropolitan Region: Standard Deviation**

	Traditional Public	Charter	All
Macomb	14.49	19.49	14.79
Oakland	12.41	13.60	12.53
Wayne	14.65	18.32	15.48
Metro Region	14.16	17.59	14.79

graduated from a competitive college ranged from 6.71% to 16.23% by county compared to 4.18% to 11.42% of traditional public school teachers. However, there were substantially larger differences with regard to holding an academic major or minor in one's teaching area. (See Tables 5a and 5b.) On average, the percent for charter school teachers ranged from 21.57% in Macomb county to 25.03% in Oakland county. In contrast, mean percentages for traditional public school teachers ranged from 3.03% in Macomb county to 13.58% in Wayne county.

For teacher turnover, the mean percentage for charter schools was higher overall, ranging from 6.58% in Macomb county to 14% in Oakland county. (See Tables 6a and 6b.) The mean percentage of teacher turnover for traditional public schools was lower and varied little, from 4.02% in Oakland county to 5.49% in Wayne county. In addition, traditional public school teachers had uniformly higher mean rates

of certification, from 63.74% in Wayne county to 69.58% in Macomb county. (See Tables 7a and 7b.) For charter school teachers, mean percentages ranged from 55.54% in Wayne county to 60.64% in Oakland county. Third, charter schools relied much more heavily on teachers with substitute permits. (See Tables 8a and 8b.) The mean percentages were four to five times those for teachers in traditional public schools, which ranged from 8.90% to 13.38% .

In sum, charter schools differed significantly from traditional public schools on all six teacher quality measures. Overall, the charter school teacher workforce was more likely to be noncertified, inexperienced, and to hold a substitute permit. Although charter school teachers were more likely to be graduates of a competitive college and to hold a major or minor in their teaching subject matter area, they left teaching at a higher rate than traditional public school teachers.

Table 8a | Percentage of Teachers with Substitute Permits in Traditional Public and Charter Schools by County

County	Minimum (%)		Maximum (%)		Average (%)		
	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter	All
Macomb	0	28	83	42	13.38	52.21	10.75
Oakland	0	21	87	71	10.84	45.25	12.68
Wayne	0	0	100	100	8.90	47.34	18.54

Table 8b | Percentage of Teachers with Substitute Permits in Traditional Public and Charter Schools by County and Detroit Metropolitan Region: Standard Deviation

	Traditional Public	Charter	All
Macomb	8.79	28.14	10.75
Oakland	9.52	19.34	12.68
Wayne	9.42	26.22	18.54
Metro Region	9.47	25.04	15.76

Findings II: Variability in Teacher Quality within Traditional Public and Charter Schools

To gauge the degree of variability within both groups of schools with respect to teacher quality indicators, the coefficient of variation was calculated for traditional public and charter schools in each county and the region as a whole. (See Table 9.) The findings reveal substantial variability within both groups in each county and the region, but with generally higher values for traditional public schools, as expected, for this much larger group. The exception is percentage of certified teachers, where the coefficient of variation is higher for charter schools than traditional public schools in every county, reflecting the uniformly higher percentages of traditional public school teachers holding certification.

Findings III: Teacher Quality and Teacher Effectiveness

Pearson correlation coefficients were used to estimate the association of teacher quality indicators with teacher effectiveness for traditional public and charter schools. (See Tables 10 and 11.) Teacher effectiveness was defined as the percent of fourth and seventh graders scoring at the proficient level on state exams in English language arts and mathematics.

For traditional public schools, the association between the percent of certified teachers and teacher effectiveness was positive and statistically significant. Coefficients ranged from small (r = .091) to moderate (r = .222). For charter schools, there were stronger positive statistically significant associations, from 0.302 to 0.400.

The association of the percent of teachers in traditional public schools who graduated from a competitive college with teacher effectiveness was positive and statistically significant, with coefficients ranging from small (r = 0.170) to moderate (r = 0.333). For charter schools, there was no statistically significant association.

For traditional public schools, there were moderate negative statistically significant coefficients for the association of the percent of teachers holding a major or minor in their subject area and teacher effectiveness, ranging from -0.266 to -0.435. For charter schools, the coefficients were negative and statistically significant for fourth and seventh grade English language arts proficiency, -0.402 and -0.395 respectively, while coefficients for fourth and seventh grades mathematics proficiency were not statistically significant.

The correlation between teacher turnover and teacher effectiveness was negative and statistically significant for traditional public schools. Coefficients ranged from -0.146 to -0.303, with larger, negative coefficients associated with mathematics proficiency. For charter schools, there was no statistically significant relationship.

The association between the percent of inexperienced teachers and teacher effectiveness was positive and statistically significant, with small to moderate coefficients, from 0.176 to 0.268, for traditional public schools. For charter schools, results were mixed. In contrast to the results for traditional public schools, the association between the percent of inexperienced teachers and teaching effectiveness for charter schools was negative and statistically significant for three of the four measures of teacher effectiveness, ranging from -0.282 to -0.364. The coefficient for seventh grade mathematics proficiency was not statistically significant.

Table 9 | Coefficients of Variation in Teacher Quality Measures for Traditional Public and Charter Schools by County and Detroit Metropolitan Region

Teacher Quality Measure	Macomb County		Oakland County		Wayne County		Metropolitan Region	
	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter	Traditional Public	Charter
New Teacher (%)	.469	.517	.821	.500	1.320	.568	.945	.559
Substitute Teacher Permit (%)	.657	.539	.878	.427	1.058	.554	.911	.530
Teacher Turnover (%)	.989	1.214	1.271	.537	1.486	1.095	1.391	1.012
Teacher Certification (%)	.208	.331	.188	.224	.230	.330	.216	.310
Competitive College Grad (%)	1.084	.809	.906	.927	1.001	.797	1.044	.846
Teaching Subject Area (%)	1.254	.839	1.193	.568	1.345	.678	1.514	.661

For traditional public schools, there was a statistically significant negative coefficient for the percent of substitute teachers and teacher effectiveness in seventh grade English Language arts (r = -0.143) and fourth grade mathematics (-0.110). There was no statistically significant relationship with regard to proficiency in fourth grade English language arts and seventh grade mathematics. For charter schools, the percent of substitute teachers was related to only to fourth grade English language arts proficiency, with a negative statistically significant coefficient of -0.367.

Overall, the statistical analysis in this section presents a study in contrasts. In few cases were teacher quality indicators consistently associated with teacher effectiveness, with the exception of the percentage of certified teachers. For both traditional public and charter schools, there were positive statistically significant coefficients on all four measures of student proficiency. Also, for traditional public schools, the percentage of teachers who graduated from competitive colleges was positively associated with teacher effectiveness. For the remaining teacher quality indicators and associated lack of school-level value-added estimates of teacher effectiveness, results were mixed or did not rise to statistical significance. These ambiguous results may be, at least in part, an artifact of the use of a single year of data and associated lack of school-level, value-added estimates of teacher effectiveness.

Findings IV: Teacher Sorting

As noted earlier, the study's hypothesis related to teaching sorting posited that more highly qualified teachers would be attracted to schools and districts with greater resources and higher achieving students. Such schools and districts are generally found in more affluent communities which can afford to spend more per pupil and pay higher teacher salaries. In public school districts, property wealth per pupil is an important indicator of wealth. Since charter schools in Michigan do not have a property tax base, the analysis then moves to instructional expenditures and teacher salaries. This section looks first to descriptive statistics and testing of means, then to correlation coefficients.

There were statistically significant differences in means for traditional public and charter schools for instructional expenditure per pupil, teacher salaries, and student poverty. (See Table 2.) The mean instructional expenditure for traditional public schools was $5,427 per pupil compared to $3,731 for charter schools, a difference of 45.5%. Mean teacher salaries were also higher in traditional public schools. For a starting teacher in a traditional public school, the mean salary was $38,575 in contrast to $35,807 in a charter school, a difference of 7.7%. At the advanced level, the gap was similar at 7.1%. Here, teachers with ten years of experience and an advanced degree earned, on average, $74,669 in traditional public schools compared to $69,762 in charter schools. Finally, the mean level of student poverty was substantially higher in charter schools at 54.76% in comparison to traditional public schools where it was 38.66%. Hence, there were stark differences between traditional public and charter schools with regard to mean instructional expenditures, teacher salaries, and student poverty.

There were statistically significant differences in mean student achievement scores across traditional public and charter schools as well. On all four measures of student achievement, the mean percent of students scoring at the proficient level was higher in regular public schools. Some gaps were substantial. For example, there was s 21.33% difference in mean proficiency levels between regular public and charter school students for fourth grade English language arts.

In sum, the descriptive statistics described in the previous two paragraphs would seem to indicate that highly qualified teachers sort themselves giving preference to traditional public schools in the Detroit metropolitan region. Results from the correlation matrices for traditional public and charter schools further test this hypothesis. Operationally, statistically significant correlation coefficients with the appropriate sign would indicate that sorting may be taking place.

School district property wealth per pupil applies only to traditional public schools because Michigan charter schools do not have a property base. The coefficients relating district

Table 10 | **Pearson Correlation Matrix for Traditional Public Schools in the Detroit Metropolitan Region**

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Instructional Spending														
2	Property Wealth	**0.107**													
3	Beginning Teacher Salary	**0.229**	0.027												
4	Advanced Teacher Salary	**0.234**	**0.282**	**0.621**											
5	ELA4 Proficient (%)	-0.011	**0.599**	-0.007	**0.228**										
6	ELA7 Proficient (%)	-0.076	**0.705**	0.009	**0.329**	**0.705**									
7	Math4 Proficient (%)	-0.066	**0.655**	-0.068	**0.253**	**0.84**	**0.676**								
8	Math7 Proficient (%)	-0.062	**0.809**	-0.034	**0.376**	**0.581**	**0.915**	**0.686**							
9	Teaching Subject Area (%)	**0.144**	**-0.299**	0.083	**-0.135**	**-0.328**	**-0.266**	**-0.435**	**-0.369**						
10	Competitive College Grad (%)	-0.027	**0.207**	**-0.201**	-0.092*	**0.170**	**0.280**	**0.230**	**0.333**	-0.020					
11	Inexperienced Teacher (%)	**-0.157**	**0.212**	-0.012	0.082*	**0.176**	**0.212**	**0.239**	**0.268**	0.093	**0.160**				
12	Teacher Turnover (%)	**0.118**	**-0.194**	0.079*	-0.023	**-0.146**	**-0.247**	**-0.189**	**-0.303**	**0.386**	-0.024	**-0.127**			
13	Student Poverty (%)	0.089*	**-0.796**	-0.005	**-0.319**	**-0.690**	**-0.822**	**-0.755**	**-0.907**	**0.398**	**-0.190**	**-0.279**	**0.252**		
14	Teacher Certification (%)	-0.022	**0.148**	-0.05	0.005	0.091*	**0.214**	**0.136**	**0.222**	0.068	0.089*	**0.177**	0.012	**-0.124**	
15	Substitute Teacher Permit (%)	-0.031	0.018	0.004	0.043	0.042	-0.143*	0.110*	-0.132	-0.084*	0.072	**0.458**	-0.059	-0.063	**-0.229**

Note: Coefficients in boldface are statistically significant at the .01 level. Coefficients with an asterisk (*) are statistically significant at the .05 level.

Table 11 | **Pearson Correlation Matrix for Charter Schools in the Detroit Metropolitan Region**

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Instructional Spending													
2	Beginning Teacher Salary	0.019												
3	Advanced Teacher Salary	0.019	**1.000**											
4	ELA4 Proficient (%)	-0.029	0.178	0.178										
5	ELA7 Proficient (%)	0.127	-0.386	-0.386	**0.572**									
6	Math4 Proficient (%)	0.024	0.007	0.007	**0.833**	**0.670**								
7	Math7 Proficient (%)	0.051	-0.025	-0.025	**0.619**	**0.771**	**0.774**							
8	Teaching Subject Area (%)	-0.142	-0.108	-0.108	**-0.402**	-0.274	**-0.395**	-0.233						
9	Competitive College Grad (%)	-0.050	-0.331	-0.331	-0.052	-0.074	-0.022	0.014	**0.471**					
10	Inexperienced Teacher (%)	-0.244*	0.195	0.195	-0.302*	-0.282*	**-0.364**	-0.160	**0.703**	**0.425**				
11	Teacher Turnover (%)	-0.013	-0.424	-0.424	0.015	0.006	-0.008	-0.035	**-0.329**	**-0.309**	**-0.364**			
12	Student Poverty (%)	0.042	-0.421	-0.421	**-0.524**	-0.397	**-0.553**	**-0.497**	0.080	-0.015	0.116	-0.024		
13	Teacher Certification (%)	-0.262*	-0.053	-0.053	**0.328**	0.302*	**0.373**	**0.400**	.231*	0.156	0.206	0.069	**-0.491**	
14	Substitute Teacher Permit (%)	0.085	0.145	0.145	**-0.367**	-0.157	-0.193	0.061	.290*	**0.377**	**0.396**	-0.273*	0.287*	-0.132

Note: Coefficients in boldface are statistically significant at the .01 level. Coefficients with an asterisk (*) are statistically significant at the .05 level.

property wealth to teacher quality indicators supported, in part, the hypothesis that highly qualified teachers would sort themselves by choosing higher property wealth over lower property wealth districts. Schools in property wealthy districts were positively associated with higher proportions of certified teachers (r = .148) and teachers who graduated from competitive colleges (r =.207). They also were associated with lower rates of teacher turnover (r = -.194). At the same time, schools in property wealthy districts had higher proportions of new teachers (r = .212) and lower percentages of teachers holding a major or minor in their subject area assignment (r = -.299), possibly reflecting enrollment growth and associated new teacher hires, or hires in hard to fill positions, such as mathematics, sciences, and special education. Finally, the relationship between use of substitute teachers and district property wealth was not statistically significantly.

Instructional expenditure per pupil represents an important school resource because it allows those schools with higher levels to purchase a high quality teacher workforce. However, the correlation matrices indicate that there was potential teacher sorting only for the teaching quality indicator of having an academic major or minor in one's teaching subject that favored traditional public schools over charter schools (r = 0.144). The same was also true for teacher sorting related to beginning teacher salaries (r = 0.083). However, there was no evidence of teacher sorting related to advanced teacher salaries.

Finally, teacher sorting and student achievement were examined. The correlation matrices indicate that there was potential teacher sorting only for the teaching quality indicator of having graduated from a competitive college. These teaching candidates favored traditional public schools over charter schools across all four student achievement measures, with statistically significant positive coefficients ranging from 0.170 to 0.333.

Summary, Conclusions, and Recommendations for Future Research

The purposes of this study were to determine if regular public and charter school teachers in the Detroit metropolitan region differed in indicators of teacher quality, to assess variability in teacher quality indicators, and to explore whether teacher sorting was taking place. Data for the 2005-2006 school year were used. Michigan is an important state in which to study these issues given its early adoption of charter schools dating back to 1993 and their strong presence in the Detroit metropolitan region.

The study drew upon a conceptual framework with research-based definitions of teacher quality and teacher effectiveness where teacher quality is comprised of inputs and processes which in turn are related to outcomes, defined as student achievement. To assess teacher effectiveness, student test scores on fourth and seventh grade English language arts and mathematics were analyzed as to whether they met state-defined proficiency levels. Some researchers as well as policymakers consider student achievement scores themselves indicators of teacher quality.

A comparison of mean values of teacher quality indicators across traditional public and charter schools found statistically significant differences for all. On average, charter schools had much higher percentages of inexperienced teachers although a larger mean percentage of charter school teachers were teaching in subject areas where they held an undergraduate major or minor. Charter school teachers also were more likely, on average, to have graduated from a competitive college. However, for certification, a higher mean percentage of traditional public school teachers were state-certified. In addition, the mean percentage of teachers with substitute teacher permits was dramatically higher in charter schools as was teacher turnover. Even when the analysis disaggregated schools by county, these differences held. At the same time, further analysis indicated that there was substantial within-group variation for traditional public and charter schools in the study, making a definitive portrait impossible.

To estimate the association of teacher quality indicators with teacher effectiveness across traditional public and charter schools, Pearson correlation was used. In few cases were teacher quality indicators consistently associated with teacher effectiveness, with the exception of the percentage of certified teachers. For both traditional public and charter school teachers, there were positive statistically significant coefficients on all four measures of student proficiency. Also, for traditional public schools, the percentage of teachers who graduated from competitive colleges was positively associated with teacher effectiveness. For the remaining teacher quality indicators, the results were mixed or did not rise to statistical significance.

As an alternative hypothesis, the study proposed that highly qualified teachers would be attracted to schools and districts with greater resources and higher achieving students. Although analysis of descriptive statistics seemed to indicate that highly qualified teachers might be sorting themselves giving preference to traditional public schools, results from the correlation matrices were more ambiguous. Results relating school district property wealth to teacher quality indicators supported, in part, the hypothesis that highly qualified teachers would sort themselves by choosing higher property wealth over lower property wealth school districts. Broader measures of resources encompassing both traditional public and charter schools, such as instructional expenditures and teacher salaries, yielded little in the way of teacher sorting. There did seem to be some sorting related to higher beginning teacher salaries that favored traditional public schools. Results for teacher sorting and student achievement were also inconclusive in that there was potential teacher sorting only for the teaching quality indicator of having graduated from a competitive college. These teaching candidates favored traditional public schools over charter schools across all four student proficiency measures.

Although this study was grounded in a research-based conceptual framework and used the population of traditional public and charter school teachers from the tricounty Detroit metropolitan region, the ambiguous results results may be, at least in part, an artifact of the use of a single year of

data. Second, while descriptive statistics, tests of means, and correlation are important starting points for analysis, future research may benefit from multivariate statistical analysis and causal modeling, using longitudinal data. Still, this study provides an important first glimpse into traditional public and charter schools in a major metropolitan area in a state that has enthusiastically embraced charter schools with minimal regulation or oversight. Broad brush stroke statistics paint a picture that should raise concerns with policymakers and spur further research in the areas of teacher quality, teacher effectiveness, student achievement, fiscal resources, and teacher sorting.

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Endnotes

[1] In their research, Rivkin, Hanushek, and Kain (2005) found teacher quality to be associated with as much as seven percent of the variance in student achievement gains. Lankford, Loeb, and Wyckoff (2002) and Jacob (2007) asserted that the issue of teacher quality is particularly acute in urban districts, where poverty is high, achievement and graduation rates are low, and schools struggle to recruit and retain classroom teachers.

[2] The U.S. Department of Education provides a basic, generally accepted definition of charter schools as "public schools that operate with freedom from many of the local and state regulations that apply to traditional public schools." See, "U.S. Department of Education, "Charter Schools," http://www2.ed.gov/parents/schools/choice/definitions.html#cs.

[3] Ballou and Podgursky (1995) provided a summary of the literature that addresses the relationship between the strength of academic background and teacher effectiveness. Their analysis of teacher quality employed college selectivity, academic major, undergraduate GPA, and SAT scores as indicators of quality.

[4] Traditional state teacher certification has been used as a proxy for teacher quality (Betts, Rueben, and Danenberg 2000; Goldhaber and Brewer 2000; Darling-Hammond 2000; Goldhaber 2006; Boyd, Langford, and Wycoff 2007), but the research evidence is mixed. Some studies have claimed that teachers lacking state certification/licensure are no better or worse in practice than state-certified teachers (Abell Foundation 2001) while others have found that state certification is an important step in ensuring teacher quality (Darling-Hammond 2002). Wayne and Youngs (2003) found that certification in a particular subject area may result in more effective teaching, but their methods and results have been criticized (Freedman 2002; Imai 2002). On the other hand, Goldhaber and Anthony (2007) found that North Carolina teachers who earned certification from the National Board for Professional Teaching Standards were more effective at raising elementary school student achievement than non-board-certified teachers. They also noted that the statistical significance and magnitude of the National Board for Professional Teaching Standards

advantage varied by grade level and student type. The advantage was greatest with low-income students in earlier grades.

[5] Some studies have correlated teacher test scores on basic skills and college entrance exams with student scores on standardized tests and found that high-scoring teachers were more likely to show significant gains in student achievement than their lower-scoring peers (Ferguson 1998; Ferguson and Ladd 1996; Strauss and Sawyer 1986). Studies with richer detail on teachers, such as the quality of teachers' undergraduate institution, have found effects on student outcomes (Ehrenberg and Brewer 1994; Ferguson and Ladd 1996).

[6] Teachers' experience levels have also been found to be positively related to student outcomes (Betts, Rueben, and Danenberg 2000; Rivkin, Hanushek, and Kain 2005). Teachers with less teaching experience produced smaller learning gains in their students than those with more experience (Fetler 1999; Murnane and Phillips 1981). The benefits of experience, however, appeared to level off after the first three to five years of teaching.

[7] It should be noted that this region represents approximately 20% of Michigan's classroom teachers.

[8] The provisional certificate is Michigan's initial teaching certificate, issued following the successful completion of an approved elementary or secondary teacher preparation program, including student teaching. It is issued after the candidate has passed all components of the Michigan test for teacher certification, including a basic skills test in reading, writing, and mathematics; subject area examinations for prospective secondary level teachers; and an elementary examination for prospective elementary grade teachers.

[9] The professional certificate is Michigan's advanced teaching certificate. It requires completion of 18 semester hours of study following provisional certification, along with three years of successful teaching experience. This certificate is valid for up to five years and renewable through the completion of continuing education credits. The professional certificate, created by 1988 legislation, replaced the permanent, 30-hour continuing and 18-hour continuing certificate as Michigan's advanced teacher credentials. However, many current teachers in Michigan still hold these credentials, which may be renewed.

[10] Per Hess (2012), "Barron's Profile of American Colleges" uses four criteria to rank competitiveness: high school class rank, high school grades, standardized test scores, and an institution's selectivity rate.

[11] See, for example, Rivkin, Hanushek and Kain (2005); and Betts, Rueben, and Danenberg (2000) who found lack of experience to be associated with ineffective teaching.

[12] The register of education personnel utilizes 19 different codes for reporting personnel separations. In 2005-2006, the most frequently reported codes were for retirements, departures for other education jobs, layoffs, and departures from the education profession.

[13] It was also used as a means to identify charter schools, for which this measure is zero, since Michigan charter schools have no local property tax base.

[14] Pupils who score at levels 1 or 2 on the state assessment are considered "proficient" in the subject tested.

[15] In those schools that contained only a grade 4 or a grade 7, the same two measures were used, but included only those pupils in either grade 4 or grade 7.

[16] Numbers of traditional public and charter schools by county and for the metropolitan region for Tables 3a to 8a are found in the Appendix.

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Acknowledgement

Numbers of Schools for Tables 3a through 8a

Table A-1

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	149	6	155
Oakland	206	14	220
Wayne	354	60	414
Metro Region	709	80	789

Note: Corresponds to Table 3a.

Table A-2

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	145	6	151
Oakland	204	14	218
Wayne	345	59	404
Metro Region	694	79	773

Note: Corresponds to Table 4a.

Table A-3

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	150	6	156
Oakland	207	14	221
Wayne	354	60	414
Metro Region	711	80	791

Note: Corresponds to Table 5a.

Table A-4

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	149	6	155
Oakland	206	14	220
Wayne	354	60	414
Metro Region	709	80	789

Note: Corresponds to Table 6a.

Table A-5

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	146	6	152
Oakland	204	14	218
Wayne	352	60	412
Metro Region	702	80	782

Note: Corresponds to Table 7a.

Table A-6

Counties and Metropolitan Region	Number of Schools		
	Traditional Public	Charter	All
Macomb	149	3	152
Oakland	205	11	216
Wayne	354	56	410
Metro Region	708	70	778

Note: Corresponds to Table 8a.

Student Loan Debt Levels and Their Implications for Borrowers, Society, and the Economy

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Introduction

Upward mobility is a prized aspect of the American dream based upon the belief that those from humble origins can climb the socioeconomic ladder through education and hard work. Increasingly, postsecondary education is an essential component of that dream. However, many students, particularly those from low to moderate income families, find it necessary to rely upon student loans, which include direct loans from the U.S. Department of Education as well as those from private lenders, to finance their studies.[1] A growing concern among policymakers is the increasing amount of debt students incur to pay for their postsecondary education. This article provides an overview of the implications associated with the growing student loan debt burden for borrowers, society, and the economy.

Background

Federally sponsored student loans are not a new phenomena in the United States. In 1958, the U.S. Congress passed the National Defense Education Act (NDEA)[2] in response to Russia's launch of Sputnik. The NDEA focused upon preparing teachers in science, mathematics, and foreign languages by providing low interest loans and loan forgiveness, if, after graduation, students pursued a teaching career. Then, in 1965, the Higher Education Act created the Guaranteed Student Loan Program.[3,4]

The Higher Education Act dramatically expanded federal financial aid. Specifically, Title IV authorized need-based student grants, which would later become known as Pell grants, and the Guaranteed Student Loan Program, consisting of subsidized and unsubsidized loans.[5] The 1972 reauthorization of the Higher Education Act went further, expanding the Stafford loan program to students attending for-profit postsecondary institutions.[6] Later, in 1978, Congress passed and the President signed into law the Middle Income Student Assistance Act.[7] It removed needs-testing for unsubsidized guaranteed student loans, again greatly expanding access. In 1979, technical amendments to the Higher Education Act increased aggregate loans amounts and allowed students without a high school diploma to be eligible for student loans.[8]

As a result of decades of expanding access to student loans along with the increasing cost of college and the failure of federal grants to keep pace with such costs, the percentages of students with student loans has increased dramatically.[9] Figure 1 provides a comparison of the percentage of full-time students in public, private nonprofit, and for-profit postsecondary institutions receiving federal student loans between 1993 and 2008.[10] In 1993, approximately one-quarter of full-time students in public postsecondary institutions took out student loans. By 2008, this percentage had risen to 41%. For full-time students attending private nonprofit postsecondary institutions, approximately 44% had student loans in 1993. This percentage rose to nearly 61% in 2008, a slight decrease from 2004. Most startling, however, was the increase in the percentage of students with federal student loans in for-profit postsecondary institutions. Even in 1993, over half of students (52.4%) attending for-profit postsecondary institutions financed at least a portion of their education with student loans; and, by 2008 approximately 89% did so. The rate of increase for for-profit institutions over this time period was more than double that of public and private nonprofit institutions.

Figure 2 provides a comparison of average amount per student of federal loan by type of institution attended between 1993 and 2008. In 1993, the average federal loan for a full-time student attending a public postsecondary institution was $3,270. By 2008, it had almost doubled to $6,450. With regard to the average federal loan for students at private nonprofit postsecondary institutions, the scenario was similar. In 1993, the average loan amount per student was $4,190, rising to $8,220 in 2008. Nonetheless, on average, students attending public institutions borrowed significantly less than their counterparts at private nonprofit colleges and universities. In 1993, full-time students attending for-profit institutions borrowed on average $4,680, the highest amount across the three types of institutions. However, the average loan amount per student rose less over time. By 2008, it was $7,230. This amount was approximately $800 higher than the average amount borrowed by students at public institutions, and it was almost $1,000 per student more than the amount for private nonprofit schools.

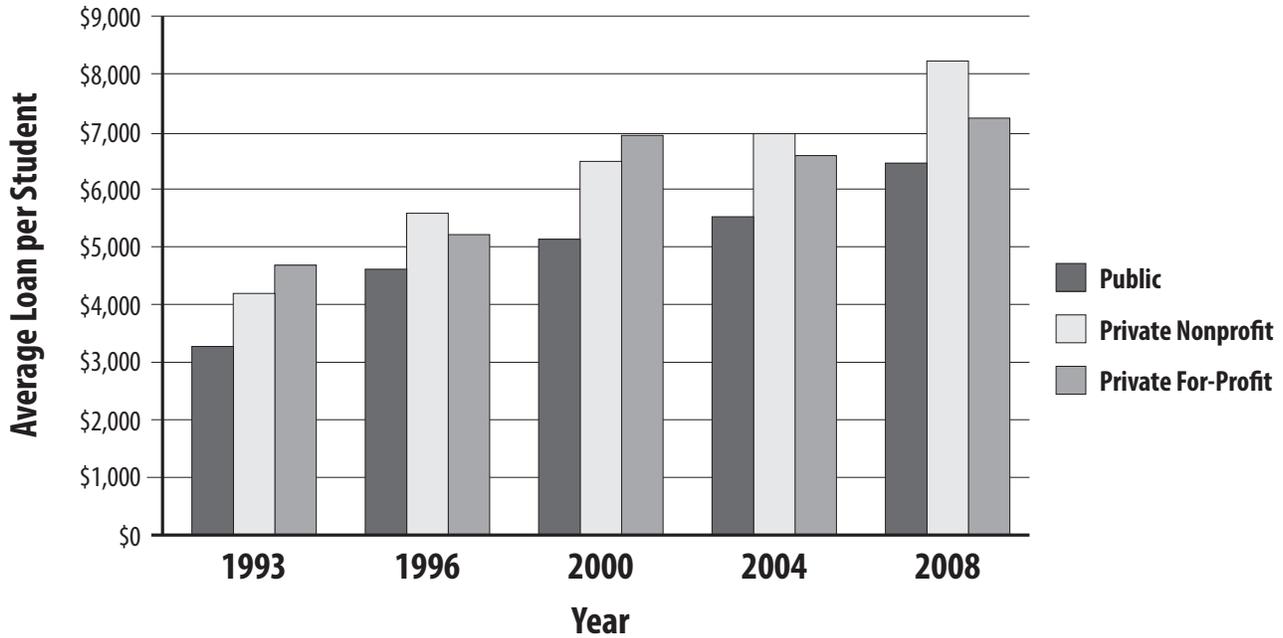**Student Loan Debt Concerns**

Policymaker concern about levels of student debt is not new.[11] As early as the mid-1980s, federal lawmakers expressed concern about the growth in student loans and the change in the ratio of grants to loans, in the sense that the proportion of grants was diminishing while that of student loans was increasing. More recently, a major concern about student debt revolves around borrowers' ability to repay. Specifically, higher levels of student loan debt reported in the previous section have translated into a lower percentage of borrowers in repayment one year post-graduation, from 65% and 66% of 1994 and 2001 graduates, respectively, to 60% of 2009 graduates.[12]

Figure 1 | **Percentage of Full-Time Students in Public, Private Nonprofit, and For-Profit Postsecondary Institutions Receiving Federal Student Loans: Selected Years 1993-2008**
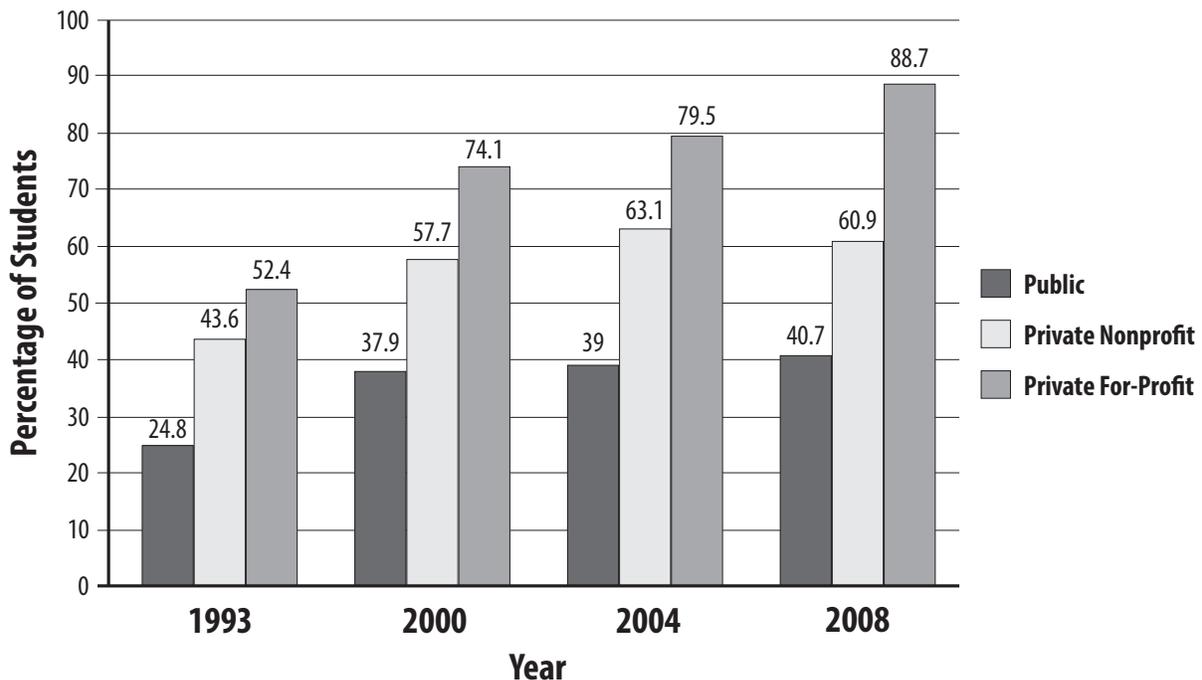
Source: U.S. Department of Education, *Digest of Education Statistics, 2011*, Table 358. Washington, DC: National Center for Education Statistics, Institute of Educational Statistics, 2012.

Figure 2 | **Average Annual Federal Loan Amount per Full-Time Students in Public, Private Nonprofit, and For-Profit Postsecondary Institutions: Selected Years 1993-2008**

The most serious issue related to student loan debt is default, defined as failure of a student borrower to make a payment for 270 or more days.[13] Here, too, concerns about default rates are not new.[14] Between 1987 and 2011, default rates fluctuated between a high of 22.4% in 1990 to a low of 4.5% in 2003. However, since 2005, default rates have risen steadily to the 2011 rate of 10.0%.[15] Recently, the U.S. Department of Education moved from a two-year calculation of default rate to one that spans three years. Using this approach, default rates would be significantly higher: 13.4% and 14.7% for 2009 and 2010, respectively, rather than the two-year approach to calculation which yields a rate 8.8% and 9.1%, respectively.[16]

Implications for Borrowers, Society, and the Economy

In addition to the potentially negative implications of debt levels for students, it is also important to consider the broader implications for society and the economy. First, the level of student loan debt may affect individuals' career choices, for example, by leading them away from public service careers to more lucrative employment in the private sector.[17] Such choices have profound implications for filling positions in education, public administration, and social welfare. Second, the magnitude of individual borrowers' student loan debt burden may affect their consumer decisions. Faced with a large monthly student loan payment for a decade, newly employed college graduates may delay major purchases, such as a car or home, not to mention even basic purchases to set up a household after graduation. In 2011, the interest rate for Stafford loans was 6.8%. With a normal ten year repayment schedule, a $30,000 student loan would require a yearly

repayment of $4,140, or $345 per month, a significant amount for many new graduates. College graduates in this position might decide to postpone marriage or starting a family.[18] Reduced consumer spending affects the U.S. economy at all levels–local, state, and national. Finally, filing bankruptcy to discharge student loans is difficult except in those cases where failure to do so would amount to "undue hardship" as defined in law.[19] As such, the notion of a "fresh start" that a bankruptcy would normally allow is rarely available to student borrowers regardless of their debt burden.

Conclusions and Policy Implications

There are obviously a large number of policy issues that revolve around student loans. This policy perspectives article has focused on the growing burden of student loan debt on borrowers, society, and the economy. That is not to say that other policy issues, such as those related to for-profit postsecondary institutions, are unimportant.[20] The same can said for affordability and equity of access to postsecondary education.[21] A third, and related issue, is diminished state aid to public universities and colleges which has created a vicious circle as these institutions often react to state funding cuts by raising tuition, hence pricing out more students.[22] Importantly, student loan debt burden is interwoven with the other policy issues outlined above. The need for policy solutions at both the federal and state levels is urgent in order to ensure opportunities for upward mobility and maintenance of a robust economy.

◫

Endnotes

1. The analysis presented in this article is limited to federal student loan debt which represents the majority of student debt and is federally guaranteed in the case of student default.

2. Pub. Law 85-864 (1958).

3. Pub. Law 89-329 (1965).

4. In an effort to make higher education more accessible, several federal financial aid programs were created with the 1944 Servicemen's Readjustment Act (Pub. Law 346, Ch. 268). Also known as the "GI Bill," it provided direct aid to veterans returning from World War II to attend college.

5. Federally guaranteed student loans were renamed "Stafford loans" in 1998. Today they are referred to as "direct loans."

6. Pub. Law 92-318 (1972).

7. Pub. Law 95-566 (1978).

8. Pub. Law 96-149 (1979).

9. William Zumeta, David W. Breneman, Patrick M. Callan, and Joni E. Finney, *Financing American Higher Education in the Era of Globalization* (Cambridge, MA: Harvard Education Press, 2012).

10. Public postsecondary institutions include four-year doctoral, other four-year, two-year, and less than two-year. Private, nonprofit postsecondary institutions include four-year doctoral, other four-year, and less than four-year. Private, for-profit institutions include two-year and above, and less than two-year.

11. Lawrence E. Gladieux, "Federal Student Aid Policy: A History and an Assessment" (Washington, DC: U.S. Department of Education, October 1995), https://www2.ed.gov/offices/OPE/PPI/FinPostSecEd/gladieux.html.

12. Jennie H. Woo and Matthew Soldner, "Degrees of Debt" (Washington, DC: U.S. Department of Education, October 2013), 9, http://nces.ed.gov/pubs2014/2014011.pdf.

13. Ibid., 18.

14. Delinquencies, or late payments, of student loans also have serious repercussions for borrowers. They result in higher interest payments over the life of the loan, and they negatively affect borrowers' credit ratings. For every one default there are two delinquencies. See, Alisa F. Cunningham and Gregory S. Kienzl, *Delinquency: The Untold Story of Student Loan Borrowing* (Washington, DC: Institute for Higher Education Policy, 2011), http://files.eric.ed.gov/fulltext/ED517424.pdf.

15. Specifically, these refer to "two-year" default rates, defined as "the percentage of borrowers who enter repayment in a fiscal year and default by the end of the next fiscal year." See, "National Student Loan Two-Year Default Rates" (Washington, DC: U.S. Department of Education), https://www2.ed.gov/offices/OSFAP/defaultmanagement/defaultrates.html.

16. Sridharam (2012) asserted that default rates are even higher after the three year time frame. See, Vassanth Sridharam, "The Debt Crisis in For-Profit Education: How the Industry Has Used Federal Governmental Dollars to Send Thousands of Students into Default," *Georgetown Journal on Poverty Law & Policy* 19: 30-58.

17. Jesse Rothstein and Cecelia Elena Rouse, "Constrained after College: Student Loans and Early-Career Occupational Choices," *Journal of Public Economics* 5 (1-2): 149-163. The authors examined the results of a unique social experiment by a highly selective university, whereby the university introduced a no-loan policy for any student who would have normally taken out student loans. Instead, the amount of financial need was replaced by grants. The job choices and starting salaries of two cohorts were compared, one from 1995 with loans and one from 2002 under the no-loan policy. Rothstein and Rouse concluded that graduates with higher debt levels were less likely to accept lower paying jobs, which included ones in the public sector.

18. Ibid.

19. Rafael I. Pardo and Michelle R. Lacey, "The Real Student-Loan Scandal: Undue Hardship Discharge Litigation," *American Bankruptcy Law Journal* 83 (1): 179-235; Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109–8, 119 Stat. 23 (2005), http://www.gpo.gov/fdsys/pkg/PLAW-109publ8/content-detail.html; Kyle L. Grant, "Student Loans in Bankruptcy and the 'Undue Hardship' Exception: Who Should Foot the Bill?" *Brigham Young University Law Review* 3: 819-847.

20. Nicholas R. Johnson, "Phoenix Rising: Default Rates at Proprietary Institutions of Higher Education and What Can Be Done to Reduce Them," *Journal of Law & Education* 40 (2): 225-271; U.S. Senate. "For Profit Higher Education: The Failure to Safeguard the Federal Investment and Ensure Student Success" (commonly referred to as the "Harkin Report"), Majority Committee Staff Report and Accompanying Minority Committee Staff Views (Washington, DC: Senate Committee on Health, Education, Labor, and Pensions, July 30, 2012), http://www.help.senate.gov/imo/media/for_profit_report/PartI.pdf.

21. Michael P. Lillis, "High-Tuition, High-Loan Financing: Economic Segregation in Postsecondary Education," *Journal of Education Finance* 34 (1): 15-30; Michael B. Paulson and Edward A. St. John, "Social Class and College Costs: Examining the Financial Nexus Between College Choice and Persistence," *Journal of Higher Education* 73 (2): 189-236.

22. Mary P. McKeown-Moak and Christopher M. Mullin, *Higher Education Finance Research: Policy, Politics, and Practice* (Charlotte, NC: Information Age Publishing, 2014).

A Snapshot of State Regulatory Framework Development in Elementary and Secondary Online Education

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Introduction

With the advent and growth of elementary and secondary online education in the United States,[1] teaching and learning has undergone radical change with heretofore unimagined alternatives to traditional brick-and-mortar classrooms. Online education is here to stay. According to a 2013 survey by Blackboard:[2]

- 43% of administrators state that their school districts offer a variety of online courses to meet diverse student needs.
- 60% of "flipped learning"[3] teachers believe online learning motivates students more.
- 89% of parents want their child in a class where mobile devices are used.[4]

Although pinning down the growth of K-12 online education is challenging because of the use of multiple measures and the limitations of comparability of data across states, Christenson, Horn, and Johnson concluded from their review of the literature that the expansion of online learning is an integral part of elementary and secondary education growth.[5] In a look to the future, KnowledgeWorks[6] forecasts "the proliferation of neuro-enhancement tools and networks"[7] and asserts "learning will be customized, connected, amplified, authentic, relevant, and resilient."[8]

Law and policy in some states has lagged behind the emergence of online K-12 education. To that end, the purpose of this article is to provide a snapshot of current state regulatory frameworks related to elementary and secondary online education. The article is divided into the following sections: background information about K-12 online education; state statutory review of K-12 online education policy; curriculum matters; academic integrity in an online education environment; and teaching in K-12 online education. The final section presents conclusions and recommendations for future research.

Background

As a reference point, distance education is much older than the Internet-based online education seen today.[9]

Correspondence, television, and other outreach methods for formal learning have been a part of the K-12 educational landscape for decades. The creation of the World Wide Web, commonly referred to as the "Web," has the potential to dramatically broaden students access to classes, often in a cost-effective manner.[10] Internet-based online education also differs from earlier learning technologies because students have the ability to network and communicate virtually.

The International Association for K-12 Online Learning (iNACOL) estimates that 1.5 million students have taken at least one elementary and secondary online course,[11] while Ambient Insights, an online learning consulting firm, estimates that over four million students have had at least one virtual learning experience.[12] These figures illustrate one of the challenges in quantifying participation in K-12 online education in a meaningful and consistent manner in that there is no consensus on how best to measure participation. A related example is projection of online course enrollments. For example, iNACOL estimates a growth rate of 30% a year to 15 million students, over a quarter of the K-12 student population, by the year 2020.[13]

The growth of K-12 online education has not been without controversy. First, despite a significant amount of research,[14] research on the effectiveness of K-12 online education is sparse.[15] Second, although online education has been hailed as "leveling the playing field" for students, Lin maintained it was "failing to live up to its promise of providing greater opportunity for all."[16] In a Washington state study, he found fewer minority, lower income, special education, and bilingual students attended online schools. Further, some state performance audits of K-12 online education have raised concerns not only about academic outcomes, but also fiscal management. In 2006, state auditors in Colorado found that students in online schools, all of which received state taxpayer funding, performed poorly on state exams and had high repeater,[17] attrition, and drop out rates.[18] One online public school even diverted state funding to private religious instruction, a violation of the Colorado constitution.[19, 20] In both the Colorado state auditor's report and a successful court case brought by the Wisconsin Education Association,[21] failure of online schools to employ licensed teachers in violation of state law was brought to the fore. Third, concerns about for-profit providers of public K-12 online education have arisen. In Arizona, publicity related to K12 Inc.'s[22] outsourcing of essay grading and math tutoring to India for students attending its state-funded online school, the Arizona Virtual Academy, resulted in an abrupt halt to these practices.[23] Of note is that K12 Inc. is among six private companies (Educational Options Inc., Apex Learning, PLATO, A+LS, and Connections Academy) that are considered to be the largest third party online course providers in the United States.[24]

State Statutory Review

Language from previous generations of technology remains in some states' statutes. For example, statutes in Louisiana[25] and North Dakota[26] still refer to "distance education courses," and terminology like "remote education programs" is still found in Illinois statutes.[27] In contrast, Arkansas statutes use contemporary terminology like "Internet, long-distance, and virtual."[28] States with a centralized virtual school use a variety of names, some contemporary, some not.[29] For example, Idaho uses "Digital Learning Academy" to describe a centrally funded Idaho state virtual school while "Wyoming Switchboard Network" is the state's online learning platform.

Forty-eight states provide funding specific to K-12 online education, affirming its central role in public K-12 education.[30] States use three models for provision and funding: centralized, publicly funded, and a combination of public/private funding. Thirteen states use a centralized model. Nine states use a publicly funded model, but, of these, seven also allow private/for-profit alternatives. In contrast, the public/private funding model allows school districts to choose between a publicly or privately funded virtual school model. Twenty-six states use this model. Some states monitor the participation of for-profit providers of K-12 online education more closely than others. For example, Arizona has a probationary approval mechanism in order to become an accredited provider of online education in the state.[31]

How states oversee and regulate K-12 online education differs. For example, Colorado[32] and Idaho[33] have detailed statutory frameworks, specifying everything from contact hours to teacher requirements and grading policies. Oklahoma provides a third example. Here the state specifies in detail required technical infrastructure of a school; that is, to be a pilot school in the Virtual Internet School in the Oklahoma Network (VISION) program, the school must contain a "video T1 digital circuit, connection to an OneNet DS3 Hub Site, 128 bit encryption servers, and 100mb Internet service to desktops"[34] In contrast, states like Alabama[35] and Alaska[36] delegate oversight and regulation to their respective state board or department of education. Further, Massachusetts leaves such matters up to individual school districts, stating: "Since the Department [of Education] does not approve or oversee online courses, it is up to each school district to decide if it will allow students to take online courses, determine which students can take online courses, and evaluate the available online courses offerings."[37]

Curriculum Matters

Some states take an active interest in curriculum matters related to K-12 online education. For example, Louisiana requires course content to be based upon current learning theory and curriculum standards.[38] Also, course content must be clearly written and revised based upon feedback, and include appropriate media for differentiated instruction. Minnesota focuses on course syllabi, but delegates final approval to local school districts.[39] When a student enrolls in a K-12 online course, the provider is required to make the syllabus available to the student's home school district for review. The district has the authority to decide if the syllabus meets the requirement for credit before authorizing the enrollment.

Several states require that individualized learning plans be part of K-12 online education. For example, in Illinois, each student "must have a written remote educational plan that has been approved by the school district."[40] The learning

plan details how achievement goals are aligned to standards, progress is reported, teachers and students interact, and compliance is achieved. This educational plan even details participation in extracurricular activities,[41] responsibilities of the student's family, and district allocation guidelines. Other states that require individualized learning plans for K-12 online education include Alabama,[42] Alaska,[43] California,[44] and Wyoming.[45]

A few states have moved toward integrating online coursework into K-12 education by making it a graduation requirement. In 2006, Michigan became the first state to require students to to complete online coursework as a graduation requirement.[46] All students are required to take a fully online course or complete a specific number of hours utilizing online learning in a traditional course.[47] Currently, Alabama requires students to "complete one online/technology enhanced course or experience prior to graduation."[48] In addition, Florida mandates that each student must complete at least one course via virtual school prior to graduation.[49]

Academic Integrity in an Online Education Environment

Academic integrity is as important in an online education environment as it is in a traditional classroom setting. Missouri requires students to be made aware of academic integrity issues, such as plagiarism, before enrollment in an online course.[50] In Missouri, the authority for disciplinary action lies with the school district in which the student is enrolled, although virtual schools have disciplinary authority as well. Issues of due process inevitably follow academic integrity issues. To ensure the rights of online students, states like Alaska require that "the student and parent have the same right to access the district appeal process as students and parents in the district's other programs."[51] Some states also require that student exams in online courses be proctored. For example, Maine requires that exams and state assessments be conducted in "an environment directly monitored by a teacher or administrative staff." [52] Arizona,[53] Idaho,[54] Mississippi,[55] and South Carolina[56] have similar requirements. In Illinois, online students enroll in an "attendance" center where attendance is recorded and tests are administered.[57]

Teaching in K-12 Online Education

In general, all states require public school teachers to be licensed or certified, but each state has its one unique set of requirements. In addition, a number of states offer a range of "alternative" routes to teacher licensure. There is no single, comprehensive source at present that details and compares all of these, much less whether or not exceptions are made for those teaching K-12 online courses, or, conversely, whether or not there are additional requirements. This section takes a more general approach by examining a selection of state laws and policies that addresses current teaching issues related of K-12 online courses.

Taking a proactive approach, Idaho has created a set of ten standards for online teachers, including articulated knowledge, dispositions, and performances on state standards.[58] In order to avoid loopholes, West Virginia law makes explicit that online teachers must also be trained in "classroom management" and "monitoring of student teaching," just as traditional classroom teachers are.[59] In contrast, Texas has developed an alternative teacher certification pathway specifically for those who seek to teach K-12 online courses.[60] Given a concern for teaching and learning conditions, Minnesota law requires that "...unless the commissioner grants a waiver, a teacher providing online instruction must not instruct more than 40 students in any online learning courses or program." [61]

The online learning environment involves more than just certified teachers. For example, Kentucky requires state teacher training institutions to build programs to train "online coaches" for students in the online elementary and secondary education systems.[62] Colorado law recognizes "mentors," individuals who provide learning center supervision for online coursework, as paraprofessionals who do not need to be certified teachers as long as they meet paraprofessional requirements.[63]

Conclusions and Recommendations for Future Research

The purpose of this article was to provide the reader with a snapshot of current state regulatory frameworks related to elementary and secondary online education. In addition to background information about K-12 online education, the article offered an analysis of selected state statutes, curriculum matters, academic integrity, and teaching related to elementary and secondary online education. In a 50-state environment, statutes and policies are as varied as the states themselves. Perhaps the only common thread is teacher certification, but even there, each state has its own set of requirements; and it is unclear if the advent and growth of K-12 online education has resulted in significant changes in a licensure regime largely based upon traditional brick-and-mortar classrooms.

Without overreaching, it is safe to conclude that K-12 online education has a secure foothold in a world that requires a populace comfortable and competent with technology. At the same time, this article presents evidence of both the promise and peril of K-12 online education; that is, the promise of universal student access and the peril of romanticizing the ease of achieving it. If nothing else, this article lays the groundwork for a broad range of future research. For example, given the critical importance of K-12 online education, is it advisable from a policy perspective to have 50 fragmented approaches? Or, in an increasingly competitive global environment, is guaranteeing equity of access to K-12 online education a compelling national interest? If so, does this constitute a rationale for a new National Defense Education Act (NDEA),[64] one that moves beyond the original emphasis on the teaching of mathematics, science, and foreign language to expanding educational opportunity through online learning?
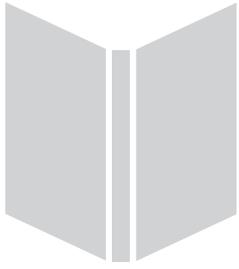
Endnotes

[1]   Elementary and secondary online education is hereafter referred to as K-12 online education.

2 Blackboard Inc., is a for-profit company which "...provides enterprise technology and solutions for the educational industry," *Bloomberg Business*, http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=25643.

3 There is no common definition of "flipped learning." See, Robert Talbert, "Toward a Definition of 'Flipped Learning,'" *Chronicle of Higher Education*, April 1, 2014, http://chronicle.com/blognetwork/castingoutnines/2014/04/01/toward-a-common-definition-of-flipped-learning. Talbert noted that not only is there a lack of a common definition of flipped learning, there is also a lack of consensus as to how (or whether) to differentiate between a flipped classroom and flipped learning. In addition, he pointed out that a recently formed nonprofit organization is seeking to develop a comprehensive definition of flipped learning that emphasizes a flexible environment, a student-centered learning culture, intentional content, and "...a reflective, accessible instructor who collaborates with other educators and takes responsibility for perfecting one's craft."

4 Blackboard, "2013 Trends in Online Learning: Virtual, Blended and Flipped Classrooms," http://whitepapers.blackboard.com/2013Trends.

5 Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson, *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns* (New York: McGraw Hill, 2008), 103.

6 KnowledgeWorks was founded in 2000, and, according to its web site, "...has evolved first from an involved philanthropy focused exclusively in Ohio to become an operating foundation and finally a social enterprise engaged in work across the United States," http://knowledgeworks.org/about/our-history.

1 KnowledgeWorks, "Recombinant Education: Regenerating the Learning Ecosystem," http://knowledgeworks.org/future-of-learning.

8 Ibid.

9 According to the Southern Association of Colleges and Schools, "...distance education is a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may use the internet; one-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices; audio conferencing; or video cassettes, DVD's, and CD-ROMs if used as part of the distance learning course or program" (p. 1). See, Southern Association of Colleges and Schools, "Distance and Correspondence Education: Policy Statement," January 2012, http://www.sacscoc.org/pdf/Distance%20and%20correspondence%20policy%20final.pdf. In contrast, "online education," also referred to as "online learning," can be defined as, "...learning that takes place partially or entirely over the Internet. This definition excludes purely print-based correspondence education, broadcast television or radio, videoconferencing, videocassettes, and stand-alone educational software programs that do not have a significant Internet based instructional component" (p. 9). See, Barbara Means, Yukie Toyama, Robert Murphy, Marianne Bakia, and Karla Jones, "Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies" (Washington, DC: U.S. Department of Education Office of Planning, Evaluation, and Policy Development Policy and Program Studies Service, September 2010), http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf.

10 Edward Lin, "Virtual Schools: Real Discrimination," 32 *Seattle University Law Review* 32:1:178.

11 International Association for K-12 Online Learning, "Technology Assisted Project-Based Instruction Program," http://www.inacol.org/research/docs/TAPBI.pdf.

12 Ambient Insight, "Ambient Insight's Learning Technology Taxonomy 2013," http://www.ambientinsight.com/Resources/Documents/AmbientInsight_Learning_Technology_Taxonomy.pdf.

13 International Association for K-12 Online Learning, "Technology Assisted Project-Based Instruction Program."

14 See, for example, "Research on the Effectiveness of Online Learning: A Compilation of Research on Online Learning," The Future of State Universities, September 2011, http://www.academicpartnerships.com/sites/default/files/Research%20on%20the%20Effectiveness%20of%20Online%20Learning.pdf.

15 See, Gene V. Glass and Kevin G. Welner, "Online K-12 Schooling in the U.S.: Uncertain Private Ventures in Need of Public Regulation" (Boulder, CO: University of Colorado, National Education Policy Center, October 2011), http://nepc.colorado.edu/files/NEPC-VirtSchool-1-PB-Glass-Welner.pdf.

16 Lin, "Virtual Schools: Real Discrimination."

17 "Repeaters" refers to students who must repeat a grade.

18 Office of the State Auditor, "Online Education," Performance Audit (Denver, CO: State of Colorado, November 2006), 2, http://extras.mnginteractive.com/live/media/site36/2006/1211/20061211_095903_HopePDF.pdf.

19 Ibid., 3.

20 Not all states have such prohibitions in their constitutions. In such cases, some states, like Florida and Alaska, have enacted law or administrative code that requires state-funded K-12 online courses and programs be nonsectarian in nature. See, Fla. Stat. § 1002.45; and Alaska Admin. Code tit. 4, § 33.441(h).

21 *Johnson v. Burmaster*, 744 N. W. 2d 900 [229 Ed. Law Rep. [859]] (Wis. App. 2007).

22 K12 Inc., also referred to as K[12], is a publicly traded for-profit business. See www.k12.com. Companies like K12 Inc. are also referred to as education management organizations or EMO's. However, it is important to note that the term EMO encompasses both nonprofit and for-profit entities.

23 Andrew Trotter, "K12 Inc. Scraps India Outsourcing," *Education Week*, September 10, 2008, http://www.edweek.org/ew/articles/2008/09/10/03outsource.h28.html. K12 Inc. was also an online education provider named in the Wisconsin litigation.

[24] Glass and Welner, "Online K-12 Schooling in the U.S."

[25] La. Admin. Code tit 28.

[26] § 2523; N.D. Cent. Code § 15-19-01.

[27] 105 Ill. Comp. Stat. 5/10-29.

[28] Ark. Code Ann. § 6-23-503.

[29] Luke J. Stedrak, Justin C. Ortagus, and R. Craig Wood, "The Funding of Virtual Schools in Public Elementary and Secondary Education," *Educational Considerations* 39 (Spring 2012): 44-54.

[30] Ibid.

[31] Ariz. Rev. Stat. § 15-183.

[32] Colo. Rev. Stat. § 22-30.7-108.

[33] Idaho Admin. Code r. 08.04.01.

[34] Okla. Stat. tit. 70, § 1210.722.

[35] Ala. Admin. Code R. 300-2-3.04.

[36] Alaska. Admin. Code tit. 4, § 33.460.

[37] Massachusetts Department of Education, "Recommended Criteria for Distance Learning Courses," September 2003, http://archives.lib.state.ma.us/bitstream/handle/2452/113454/ocn752504049.pdf?sequence=1.

[38] La. Admin Code tit. 28, § 2395.

[39] Minn. Stat § 124D.095.

[40] 105 Ill. Comp. Stat. 5/10-29(5).

[41] Other states, like Minnesota and Colorado, include extracurricular participation in statutes related to K-12 online education. Minnesota law states that an "online learning student may participate in the extracurricular activities of the enrolling district on the same basis as other enrolled students." (See, Minn. Stat. § 124D.095.) Colorado also allows K-12 students in online programs to participate in extracurricular or interscholastic activities. (See, Colo. Rev. Stat. § 22-30.7-108.)

[42] Ala. Admin. Code r. 290-3-1-.02.

[43] Alaska Admin. Code tit. 4, § 33.421.

[44] Cal. Code Regs. tit. §11963.5.

[45] Wyo. Stat. Ann. § 21-2-202.

[46] 2006 Mich. Pub. Acts no. 123.

[47] Mich. Comp. Laws § 380.1278.a.

[48] Ala. Admin. Code r. 290-3-1-.02(d)(4).

[49] Florida House of Representatives, "School District Virtual Instruction Programs," 2010-11 *Education Fact Sheets*, 269-273, http://www.myfloridahouse.gov/FileStores/Web/HouseContent/Approved/Web%20Site/education_fact_sheets/2011/documents/2010-11%20School%20District%20Virtual%20Instruction%20Programs.3.pdf.

[50] Mo. Rev. Stat. § 162.1250.

[51] Alaska Admin. Code tit. 4, § 33.421.

[52] Me. Rev. Stat. Ann. tit. 20-A: EDUCATION, §19152.

[53] Ariz. Rev. Stat. Ann. § 15-808.

[54] Idaho Admin Code R. 08.04.01.

[55] 36-000 Miss. Code R. 112.

[56] S.C. Code Ann. § 59-16-15.

[57] 105 Ill. Comp. Stat. 5/10-29(6).

[58] Idaho Admin. Code. R. 08.02.02.033.

[59] W. Va. Code R. § 126-48-4.

[60] Tex. Educ. Code. Ann. § 30.A.112.

[61] Minn. Stat. § 124.D.095 (4)(f).

[62] Ky. Rev. Stat. Ann. § 161.166.

[63] Colo. Rev. Stat. § 22-30.7-102.

[64] The National Defense Education Act of 1958 (P.L. 85-864; 72 Stat. 1580).

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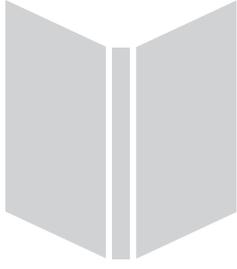
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