

# The Myth of Accountability: How Data (Mis)Use is Reinforcing the Problems of Public Education

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## Introduction

There is an ongoing tension in the American public education system between the values of excellence, equity, and efficiency. Accountability has emerged as a framework in education reform that promises to promote and balance all three values. Yet this frame is often contested due to disagreements over the role of incentives and penalties in achieving desirable change, and concerns that the proposed mechanisms will have significant unintended consequences that outweigh potential benefits. More fundamentally, there is widespread disagreement over how to quantify excellence and equity, if it is even possible to do so. Accountability rhetoric echoes a broader turn toward data-driven decision-making and resource allocation across sectors. As a tool of power, accountability processes shift authority and control to policymakers, bureaucrats, and test makers over professional educators.

Today, measurements of school performance have become so commonplace that they are an assumed part of education debates. As new forms of data are easier to collect and analyze, drawing on and interacting with information to measure the impact of programs and to inform decision-making and policy has emerged as a key strategy to foster improvement in public schools (Coburn and Turner 2012). But when did our national obsession with educational data start? What are the historic precursors to accountability as we now know it? What set of political, economic, cultural, and social conditions led to test scores becoming the main measure of a school's success? How do current data-driven practices

compare to historical data-driven practices and how have the terms shifted over time? Who does accountability serve? What are the incentive structures, and how is accountability gamed and resisted? In short, accountability of what, to whom, for what ends, at what cost?

The accountability movement reflects the application of free market economics to public education, a legacy of the Chicago School of Economics in the post-World War II era (Spring 2015). As a set of policies, accountability was instantiated in the Elementary and Secondary Education Act (ESEA) of 1965, reauthorized as the No Child Left Behind Act (NCLB) of 2002, and reinforced by the Every Student Succeeds Act (ESSA) of 2015. ESSA gives more autonomy and flexibility to states than they had under NCLB through competency-based assessments, which could drive the development of personalized learning technologies. ESSA's accountability processes also require new types of data collection and disaggregation, including of non-academic indicators of school quality. Significantly, ESSA mandates the collection and reporting of per pupil expenditure data at the school level. Teaching and learning are increasingly being measured and quantified to enable analysis of the relationship between inputs (e.g., funding) and outputs (e.g., student performance) with the goal of maximizing economic growth and productivity and increasing human capital.

The accountability movement is built on a long history of standardized testing and data collection that privileges quantification and statistical analysis as ways of knowing. An underlying assumption is that learning can be measured and is an effect of instruction. This is an empiricist perspective descended from John Locke and the doctrine that knowledge derives primarily from experience. Accountability in education also holds that schools are fundamentally responsible for student performance, as opposed to families, neighborhoods, communities, or society at large. This premise lacks a solid evidentiary basis, as research shows that student performance is more closely linked to socioeconomic status (Coleman 1966; Sirin 2005). Finally, efforts to achieve accountability presume that market-based solutions can effectively protect the interests of society's most vulnerable.

As has been true in other sectors when data-driven surveillance and assessment practices are introduced, outcomes may not be as expected. It is unclear whether this data push will promote equality of opportunity, merely document inequality, or perhaps even increase racial and socioeconomic segregation, as Pauline Lipman (2011) has argued in her work on neoliberal educational reform in Chicago. Furthermore, little is understood about the costs of increased assessment on the health and success of students and teachers, externalities that are rarely measured or considered in the march to accountability. States will need to generate stakeholder buy-in and think carefully about the metrics they include in their accountability formulas in order to balance mandates for accountability, the benefits

that accrue to students from preserving teacher autonomy and professionalism, the social good of equal opportunity, and public calls for transparency and innovation.

In order to ground conversations about the use of data analytics in education, this paper examines what accountability allows us to see and what it obscures from our vision. As accountability has become a mainstay of public education, we must also consider how accountability instruments and related education reform platforms are themselves assessed and held accountable. Education reform and the battles over accountability are increasingly intersecting with new technologies, which are imagined to create new forms of accountability with little consideration for the longstanding history of current trends. Taking a step back is necessary to successfully move forward.

### **Excellence, Equity, and Efficiency**

Schools are an institution where political agendas play out and power struggles unfold. In the public and political imagination, schools matter because they produce the citizens, leaders, and workers of the future. As both the population basis and the economic organization of our society change, so too do the requirements for productive citizenry, and schools are on the front lines of adapting to these challenges (Kliebard 2004, Tyack 1974). In the early days of the republic, United States schools were embedded in communities and were responsive to the particular needs of these communities. Schools aimed to solidify the social order and were seen as instruments of “deliberate social purpose” (Bailyn 1960, 22). As Alexis de Tocqueville noted in 1835, “in the United States politics are the end and aim of education,” in contrast with Europe where “its principal object is to fit men for private life” (1945). As a representative democracy, the United States needed educational institutions to equip citizens with the intellectual tools and civic knowledge necessary for self-governance.

By the beginning of the nineteenth century, population expansion caused by immigration created new demands on schools to assimilate recent arrivals into American society and, in effect, white Anglo-Saxon culture. Comprehensive systems of public education were needed, and Boston created the first one in 1789 (Schultz 1973). Wealthy members of the merchant class in many urban centers built monitorial schools in which advanced students, known as monitors, taught less advanced ones. With up to five hundred poor and immigrant students assigned to each teacher, these schools were an early embodiment of the principle of efficiency, and were optimized for visual surveillance, rote learning, the management of bodies, and social control (Upton 1996). The organization of space, with tight seating arrangements and tables organized to face the teacher, reflected notions of the ideal docile citizen, a

theory of knowledge as structured, orderly and fact-driven, and a scalable transmission theory of learning and pedagogy.

The efficiency mandate intensified as immigration continued to increase through the late nineteenth and early twentieth century alongside the rise of industrial capitalism, and compulsory education and anti-child labor laws effectively legislated state school systems into existence (Kessner 1977). Control over schools became more centralized and principles of scientific management were adopted from the industrial sector (Brumberg 1986). Comprehensive schools were built, a largely female teaching force was hired, schools of teacher education were founded, and managerial systems were devised to handle the broadened scope of work now under schools' purview (Rousmaniere 1997). Many populations were systematically excluded from public education in this era, either through legal or de facto segregation, including the disabled, African Americans, Chinese Americans, and Mexican Americans, while other groups, notably Native Americans, were forcibly removed from their communities and educated in boarding schools.

By the mid-twentieth century, the priorities of equity, fairness, and nondiscrimination had become more salient, exemplified by the 1954 Supreme Court decision in *Brown v. Board of Education*, which famously declared state laws establishing separate schools for black and white students unconstitutional. The Civil Rights Act of 1964 further encouraged the desegregation of schools to prevent race-based discrimination and school systems increasingly came under community control (Podair 2002). In 1965, the Elementary and Secondary Education Act (ESEA) was passed as part of Johnson's War on Poverty, granting states federal funds for compensatory education to close achievement gaps. Title I, which distributes funds to schools and school districts with a high percentage of students from low-income families, is one provision of ESEA. ESEA placed an evaluation requirement on local agencies to report on the progress of their federally funded programs, but there was no explicit threat of funding removal if program goals were not met. Evaluation is concerned with effectiveness, while accountability is concerned with effectiveness and efficiency and depends on the existence of rewards and punishments (Richburg 1971). Without such a "stick," ESEA's evaluation requirement was not an accountability measure but rather an accounting procedure (Dyer 1971), and yet it foreshadowed the accountability movement by establishing precedent for an expanded federal role in education.

Meanwhile, rising anxieties about global competitiveness in the Cold War era led to the re-emergence of excellence as a central value. Notions of human capital had become embedded in educational research as economic thinking emanated from the Chicago School of Economics, and public schools were framed as a means of increasing the productivity of the individual and the nation-state (Spring

2015). Internationally comparative tests seemed to indicate that American students were falling behind their counterparts abroad. Published in 1983, the watershed report *A Nation at Risk* ominously predicted that “The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people.” The perceived threat of a loss of global competitiveness justified an education reform project of standards-based assessment aimed at improving student performance.

The accountability movement brilliantly tapped into the tension between equity and excellence and seemed capable of addressing both goals at once. Leon Lessinger, future U.S. Associate Commissioner for Elementary and Secondary Education, argued that schools in a democratic society should be responsive to the public but that decision-making power should rest with professionally trained experts (Spring 2014). He believed that community control should give way to expert control, and he proposed the establishment of a national education accounting firm empowered to measure school performance through achievement tests and to report the results to the public (Lessinger 1970). *A Nation at Risk* put education on the federal agenda, but the reforms themselves were undertaken voluntarily and by states. George H. W. Bush and Clinton assembled teams of governors to work on these issues throughout the 1980s and 1990s, building buy-in and creating infrastructure within states dedicated to measuring and enhancing student performance (Ravitch 2010).

The 2000s saw significant education reform rooted in evaluation, standards, and a dramatically expanded federal role. No Child Left Behind (NCLB), a key piece of legislation passed during the first term of the George W. Bush presidency, moved the standards movement onto the national stage and fundamentally altered the relationship between states and the federal government. It passed Congress with broad bipartisan support in 2001 and was signed into law in January 2002. NCLB mandated regular standardized testing of students and funding reductions for schools whose students failed to meet established goals. It required schools to demonstrate adequate yearly progress (AYP) or face financial consequences, state takeover, or even school closure. In particular, schools were required to show improvement across various demographic groups, particularly among historically underperforming groups.

Many of the drawbacks of high stakes testing emerged in the wake of NCLB, highlighting the unintended consequences of heavy reliance on student test scores. The pressures of testing culture led to cheating by states, school leaders, and teachers. States could engineer higher passing rates by lowering the passing mark or making the test content easier (Kamenetz 2015). Principals of small schools and charter schools in school choice markets could game the system by restricting the admission of low-

performing students, by requiring an interview with parents of applicants or limiting acceptance rates of English language learners (ELLs). But the most common and widespread strategy for gaming the system remains test-prep pedagogy. When schools, particularly low-performing schools, concentrate attention on the subjects and grade levels with high stakes tests, less time remains for the arts, citizenship, and critical thinking, which may lead to teacher burnout and student boredom.

Testing experts agree that tests have their limitations, and even testing companies like Harcourt Brace and Riverside Press have publicly stated that important decisions shouldn't be made solely on the basis of a single test score (FairTest 2007). Tests may contain embedded bias and may create disproportionate pressures for members of minority groups (Santelices and Wilson 2010). Furthermore, high stakes tests are more extrinsically than intrinsically motivating, which may negatively impact students' experience of school, as intrinsic motivation is predictive of healthy development and general well being (La Guardia 2009). Broad frustration with high stakes testing, the Common Core, and the expanded federal role in education exemplified by No Child Left Behind (NCLB) led to a policy correction in the form of the Every Student Succeeds Act (ESSA), which replaced NCLB in December 2015. ESSA scales back the federal role in elementary and secondary education and calls on states to incorporate factors other than standardized test scores into their accountability systems.

## Deconstructing Accountability

Accountability is wrapped up in a set of values, commitments, theories, and power stakes that are worth unpacking. Doing so can help us better understand the cultural work of accountability, and how and why the education reform project of which it is a part may increase inequality while purporting to address it. Accountability reflects a longstanding cultural bias toward quantification. It imagines learning as measurable and as an instructional outcome. It asserts that schools are principally responsible for student performance and that school-based interventions can effectively remedy deep social inequalities. It thus obscures broader political economic and social forces that impact upon students' educational experiences and trajectories. Lastly, accountability figures data distribution and the market as viable means of equalizing opportunity.

Accountability has been able to take such firm root in part because standardized testing and data collection have an extensive history in American public education. For example, as far back as 1845, the Boston School Committee administered written standardized achievement tests as part of school improvement efforts. The committee published the results in their annual report to the public in an

implicit assertion that school effectiveness should be public knowledge. In the years following World War I, intelligence tests initially designed to sort army recruits were adapted for schools, where they were used to assign students to instructional tracks. Intelligence testing found support among diverse groups, from progressive educators who saw it as a child-centered practice; to schools of teacher education who sought to use tests to elevate the field from a craft to a science and minimize oversight by non-educators; to administrators and educational bureaucrats who regarded it as more objective than teachers' assessments and as an efficient means of allocating resources; to eugenicists, whose racist claims of European genetic superiority benefited from the veneer of science the tests offered (Jensen 1969; Reddy 2008).

Other well-established testing programs include the National Assessment of Educational Progress (NAEP), first administered in 1969, and international assessments like the Trends in International Math and Science Study (TIMSS), implemented in 1995. Federal-level data collection began in 1867 with the establishment of the U.S. Department of Education. Early federal data collection focused on enrollment figures, attendance rates, teacher salaries, expenditures, and numbers of high school graduates. This function has been fulfilled by the National Center for Educational Statistics (NCES) since 1974. NCES now collects data on early childhood through postsecondary education, domestically and internationally, and compiles and disseminates data on state level educational reform activities. It laid the groundwork for the success of the accountability movement in establishing the quantitative as a valid way of knowing about education and in creating an infrastructure for the collection and recording of quantitative data.

Furthermore, accountability presumes an instrumental view of learning and considers student learning to be the product of an instructional process. It takes student learning as an output, and assumes a meaningful causal relationship between that output and educational inputs like funding, pedagogy, and curriculum. Whereas in Platonic epistemology, learning is understood as an intrinsic, naturally emerging phenomenon, and knowledge acquired is a recollection of something already known, learning under an accountability paradigm borrows from the empiricist perspective of John Locke, with the individual born as a blank slate and learning achieved through exposure and experience. In this materialistic view, that which is measurable is valued, while intangibles like insight, presence, social attunement, and political commitment, more circuitously developed and more difficult to quantify, are devalued.

Third, the construct of accountability presumes that if students fail to perform, it is the responsibility of the school or the home environment. To be sure, school conditions and family support matter, but not enough to counteract the pernicious effects of poverty, structural racism, and mass disinvestment in

public welfare. This fact was firmly established in 1966 by the Equality of Educational Opportunity study, commonly referred to as the Coleman report. Commissioned by the United States Department of Health, Education, and Welfare in response to provisions of the Civil Rights Act, the study surveyed a national sample of schools to assess the availability of equal educational opportunities for members of minority groups in comparison to white students. Assessing inputs like curriculum, school facilities, and academic practices in relation to the output of student performance, the Coleman report found that the success of low-income students is tied to whether they attend schools with wealthier students, whose advantages benefit all.

Recent research has reinforced the correlation between socioeconomic status and educational performance, demonstrating that poorer students bring a range of challenges with them when they come to school, including worse health and environmental stressors, which significantly impact their readiness to learn (Orfield and Lee 2005). Accountability programs draw on discourses like the achievement gap and a culture of low expectations, suggesting that the socio-emotional, cognitive, and health impacts of the material conditions of poverty can be disentangled from student performance. In so doing, these programs outsource responsibility for deep social problems to schools, teachers, families, and students. However, it becomes politically difficult to speak out against these discourses because accountability, like the ideology of meritocracy, is deeply rooted in American optimism and egalitarianism. As a country, we are still unwilling to face our colonial past and the ways that the legacy of slavery continues to differentially structure opportunities, making student performance disparities more an education debt than an achievement gap (Ladson-Billings 2006).

Finally, accountability as a lever for equity presumes that market-based solutions serve the best interest of all students, including the less advantaged. Combined with school choice policies, it positions parents and students as consumers in an educational marketplace and autonomous free agents responsible for maximizing their own opportunities. Schools are likewise figured as service providers who must navigate a competitive choice marketplace as they vie for students/customers. They do so by distinguishing their market niche and by using data to demonstrate their effectiveness. Educational marketplaces disproportionately advantage those with the time, social capital, and institutional knowledge to navigate the system. They benefit the relatively privileged within all racial and social class groups and function to keep middle and upper middle class families invested in public schools in gentrifying areas (Ball, Bowe and Gewirtz 1995). As a result, accountability programs may backfire and have the unintended consequence of reinforcing school segregation as parents eschew neighborhood schools in favor of higher performing schools elsewhere. One such example can be found in the New York City public school system, which is among the most segregated in the nation due to a combination of



school choice, zone line systems, and complicated enrollment policies (Kucsera and Orfield 2014).

Perhaps the most fundamental problem with the framework of accountability as a lever for change is that it imagines information as leading to better outcomes, without interrogating how the provision of information may differentially advantage some individuals and groups over others. It is unclear whether accountability is likely to promote the cause of equity, as its proponents hope, or whether it is more likely to reinforce the unequal distribution of educational opportunities by race and class.

## The Promises and Hazards of Digitization

The Every Student Succeeds Act (ESSA) of 2015 is the latest effort to implement measures towards accountability. ESSA gives states more autonomy and flexibility than they had under No Child Left Behind and includes a provision for competency-based assessments, which can be systematized by technology in a way that appeals to those invested in personalized and adaptive learning tools. We are likely to see a move toward automated assessment and digital data collection on student learning. We will also see new types of data collection and disaggregation on school conditions, including of non-academic indicators of school quality to be determined by states. States can select any indicator that “allows for meaningful differentiation in school performance,” which is “valid, reliable, comparable, and statewide” and can be disaggregated by school to show how it affects students in different subpopulations. Possible indicators might include data on student engagement, educator engagement, graduation rates, dropout rates, disciplinary statistics, data from social-emotional surveys, number of students in advanced classes, access to and completion of advanced coursework, postsecondary readiness, and school climate and safety (Figlio and Loeb 2011). Requiring states to collect, analyze, and report per pupil expenditure data on a school-by-school basis, ESSA seeks to further clarify the relationship between funding and student performance.

As has been true in other sectors when data-driven surveillance and assessment practices are introduced, outcomes are not always as expected (Mateescu, Rosenblat, and boyd 2015). Data is, after all, socially produced, and reflects existing social biases. Data mining, for example, is often seen as a neutral algorithmic technique that can insulate decision-making from human prejudices. However, the resulting decisions can disparately impact historically disadvantaged groups and lead to discrimination, reproducing race, gender, and class-based systems of inequality in matters of hiring and employment (Barocas and Selbst 2015), risk assessment in criminal sentencing (Angwin, Mattu, Larson and Kirchner 2016), and other domains. Therefore it is critical to treat data with a healthy skepticism and remember its non-neutrality when considering its use in making consequential decisions.

Under ESSA, evermore aspects of teaching and learning will be measured and quantified, continuing the trend of shifting power, authority, and influence from teachers and administrators to lawmakers, educational bureaucrats, and policymakers. Teachers will likely continue to experience these power shifts in various, complex and sometimes contradictory ways depending on local conditions and school culture, as well as their own sense of identity and agency (Sloan 2006). Novice teachers working in under-resourced environments may find that accountability systems support their efforts to deliver higher quality and more equitable instruction despite their inexperience (Scheurich, Skrla and Johnson 2004). More seasoned teachers may find that such measures strip them of professional autonomy, de-professionalize their work, and lead to greater workplace surveillance (Jones et al. 1999; McNeil 2000; Lipman 2009; Apple 2009; Gilliom 2009).

In all likelihood, educational data and accountability systems that present as mechanisms for promoting student learning will impact teachers' work environments in unanticipated ways. More specifically, data on students may be used to monitor teachers. To date, most privacy scholarship is based on a *dyadic* model in which information is collected on a given subject (e.g., a student) and used to monitor that subject. In a *refractive* model, surveillance over one party (e.g., a student) can give rise to a new control relationship over another party (e.g., a teacher) (Levy and Barocas 2016). Applying such an ecological model of refractive surveillance in the education space may help explain the multiple and overlapping effects of accountability policies for various actors – students, teachers, parents, and administrators. In other sectors, workplace monitoring technologies and practices are applied (e.g. closed circuit cameras in the retail and food service sectors, and email and browser monitoring in white-collar work environments) in order to promote productivity and task adherence, and yet workers find many ways to creatively evade these monitoring systems and resist surveillance (Rosenblat, Kneese and boyd 2014). We might imagine teachers inventing their own tactics of resistance to avoid potentially surveillant systems.

Systems of assessments, curricular standards, and audits are reshaping educational practices and the experiences of students and teachers within educational institutions. When attached to negative consequences like school closures, reconstitutions under new leadership, and takeover by the state or district, and when decoupled from financial supports, accountability programs can do as much harm as good. If implemented responsibly, accountability systems could potentially help superintendents and administrators identify teachers and pedagogical practices that get results. However, it remains to be seen whether this data push will promote equality of opportunity, merely document inequality, or perhaps even increase racial and socioeconomic segregation.

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