

# Cogs in the Machine

## Big Data, Common Core, and National Testing

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**PIONEER INSTITUTE**  
PUBLIC POLICY RESEARCH

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# **Cogs in the Machine** **Big Data, Common Core,** **and National Testing**

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## **Executive Summary**

The era of “Big Data” has overtaken the field of education. New technology promises to transform education, facilitating previously unimagined learning opportunities and, from a purely administrative standpoint, allowing educators to complete in seconds what used to consume laborious hours.

But the new technology has a downside as well. It allows 21<sup>st</sup>-century disciples of foundational Progressive John Dewey to accomplish what was out of reach before: collecting data on every child, beginning with preschool or even earlier, and using it to track the child throughout his academic and professional career. In this way, theoretically, government “experts” can determine what is successful in education, what isn’t, and what sorts of education and training are most beneficial to produce workers for the global economy. Aside from whether this dream is realistic, it presents myriad dangers to student privacy.

For many years the federal government has been using grants to induce states to build increasingly sophisticated, identical student-data systems. More recently, the federal government has worked with private entities to design and encourage states to participate in other related initiatives such as the Data Quality Campaign, the Early Childhood Data Collaborative, and the National Student Clearinghouse. The National Education Data Model, with its suggestion of over 400 data points on each child, provides an ambitious target for the states in constructing their data systems. And whatever parts of this warehoused information are given to the national assessment consortia aligned to the Common Core State Standards (CCSS) will

be made available to the U.S. Department of Education.

As technology advances, initiatives from government, private entities, and public-private partnerships have sprung up to eliminate the technical obstacles to increased data-sharing. Although the ambitious inBloom project has faded in the face of withering parental criticism, other projects abound: the Workforce Data Quality Initiative, Unified Data Standards, MyData, ConnectEd, student-unit records, and private companies’ education apps “donated” to schools in exchange for access to student information. This treasure trove of student data is a hugely tempting target for hackers, who have already begun their assaults.

None of the privacy protections currently in place promises reliable protection of student data. The federal Family Educational Rights and Privacy Act (FERPA) has been gutted; Big Data makes anonymization of an individual student’s information practically impossible; opting out of Common Core tests, or replacing them with alternative tests, is of limited benefit; and the push to collect and share student data may engulf even private-school and homeschool students.

Beyond the “filing cabinet” data that schools have long collected, the purveyors of “transformational” education seek access to fine-grained information about students’ deeper selves – their attitudes, values, mindsets, and dispositions. Ascertaining and altering these non-cognitive features, the proponents believe, can improve education outcomes and shape students into the types of citizens (and workers) the future economy needs. The mountains of physiological and psychological data that can be gleaned from

a student's interaction with technology are considered fair game. Through two reports issued in 2013, the U.S. Department of Education has described and trumpeted the possibilities associated with this type of data-collection.

These expansive data structures are intimately connected to Common Core, in several ways. Not only will the data sent to the assessment consortia be made available to the federal government, but the national standards create a unified "taxonomy" that facilitates common instructional materials and technology for data-collection. Moreover, because Common Core focuses not on academic knowledge but rather on "skills" that involve attitudes and dispositions, it paves the way for assessments and digital platforms that measure such attributes.

Finally, the rush to collect and share students' data implicates more fundamental problems. It turns constitutional protections of individual autonomy and privacy on their head as government learns and records more and more about each citizen. His private sphere – his personal sanctum – shrinks. Even if government were to keep the information private, the very existence of a "dossier" is immensely intimidating and inhibiting. This alters both civil society and the private realm, and not in the direction of greater freedom.

A person's right to his own information must be considered a property right. Especially in the area of education, laws must change to grant parents control over the collection and disclosure of their children's data. And parents must educate themselves about what is really happening in the schools, so that they can know what types of data are being collected and what is done with it. Parents must be empowered to draw the line.

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“Data! Data! Data!” he cried impatiently. “I can’t make bricks without clay.”  
—Sherlock Holmes, “The Adventure of the Copper Beeches,” 1892

“But the institutionalizing [of education] on a large scale of any natural combination of need and motive always tends to run into technicality and to develop a tyrannical Machine with unforeseen powers of exclusion and corruption. . . .”  
—William James, *The Ph.D. Octopus*, 1903

“If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself. A dependence on the people is, no doubt, the primary control on the government; but experience has taught mankind the necessity of auxiliary precautions.”  
—James Madison, *The Federalist Papers No. 51*, 1788

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### **Introduction - The Goal of Collecting and Sharing Student Data**

Americans have recently been confronted with a series of startling events illustrating the dangers of unfettered governmental data-collection on citizens. From revelations about sweeping National Security Agency data-mining (along with the compromise of some of that agency’s most sensitive secrets) to fears about what a politicized Internal Revenue Service might do with citizens’ healthcare records under the Affordable Care Act, Americans are increasingly uneasy about losing their privacy in a hyper-connected world.

Until recently, less public attention has been paid to the enormous amounts of student data collected by schools and shared within multiple bureaucracies. If parents are to protect their family’s privacy, they need to understand fully what is happening in this realm.

### **Legitimate Data-Collection and Use**

The purpose of this paper is not to discredit all the ways in which technology is being used to collect data. It was written as its authors traveled around the country, catching mobile Internet in airports, coffee shops, and hotels. Technology can and often does enhance our world and, more narrowly, education. Now anyone can access the works of Shakespeare and Botticelli and Bach for pennies, if not free, at local libraries; teachers can be liberated from burdensome record keeping<sup>1</sup> and focus more on their students. Young people with special needs or who live in remote areas can access technology that enhances their educational opportunity; others can customize an education designed around demanding athletic schedules or career pursuits.

Since their inception, schools have collected data from students. With the advent of modern technology, people began storing information not just in their heads and on paper, but in massive banks of computers vulnerable to theft, oversharing, and misuse.

Every teacher collects information about students and how they learn. The question is not whether sophisticated technology should be used; rather, it is a question of what kinds of data should be collected—each family’s annual income, race, answers to daily quiz questions, favorite color, bus schedule, religious preferences, and so forth—and who should have access to it. Public education is largely funded by tax dollars, and those who control tax dollars have begun demanding more and more in exchange for opening other people’s purses. It seems reasonable to demand information about a family’s income to determine whether they qualify for public subsidies for lunch or extra tutoring, but should their private information also be open to any person who can pry it from states and schools?

Because schoolchildren are both immature and a captive audience, they are vulnerable to exploitation by those who control their schools. The further the levers of power extend away from children and their families, the more open to such exploitation they become. It is far easier for a lobbyist to convince a few dozen lawmakers to enact data and other policies that give special interests more power over thousands of families than to convince each family to grant such access it. This is why children and their families should be presumed the owners of their private information and treated accordingly. The problem of data exploitation, then, invokes a question of property rights.

Government should be forced to justify taking information from public-school students, just as it must justify taking other property. The difficulty in this case is that government now touches so many facets of people’s lives. For many—especially the neediest in our

society—government functions as health, education, home, and food provider, which potentially grants it access to an enormous swath of intimate details about these people’s lives — their heart rate, speed at test-taking, most difficult vocabulary words, and so forth. Governmental initiatives to collect and unify individuals’ information, which this paper will outline later, open those who are already the most vulnerable to exploitation by the very institution that reaches out to help. In its attempts to help the needy, and improve education or the economy, government also claims the authority to harvest private information, even about people who are not direct recipients of its services. This is why the growth of government increases coercive data-mining and decreases individual property rights.

It is beyond the scope of this paper to determine exactly what information is proper for education institutions to collect at each level, but gathering even a handful of rudimentary data points can create profiles that, even without names, can make it easy to identify their owners. And it is impossible to secure data once it is electronically collected. Anything placed on a computer that connects to the Internet can be hacked, and even computers not connected to the Internet can be accidentally or deliberately accessed by unauthorized users.

The appropriate policy, then, for collecting any information is one of informed consent. The parents who are signing their child’s information over must be given clear, succinct information about who will get what data and for what purpose, and must be asked permission ahead of time so they can exercise informed consent on their child’s behalf. The second criterion is whether the people who

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will access any information collected *need* to have it. Do parents think so, or merely bureaucrats? And do those with access to data have permission from its owners? In a free society, governments cannot demand to know the inner workings of citizens' minds and their daily habits, especially since such intimate information allows government to control rather than be controlled by the populace.

Because data-accumulation, once begun, is a slippery slope, care must be taken to ensure it is as limited as possible. This is why almost all information about children should be kept within their own schools and under their parents' control. At the very least, states and the federal government should only have access to aggregate data about children. They should also only have the least amount of information necessary to provide basic accountability. This would include only annual, end-of-year test scores in reading and math for a limited number of grades; race (for civil rights protections); Individual Educational Plans/English as a Second Language (IEP/ESL) status; and free or reduced-price lunch status (not family income).

As technology races ahead, it is also important to focus not only on the "filing cabinet" information now stored on computers, but also on the more sophisticated data-gathering capabilities of digital tools. In a free society, it is intolerable for governments to know the inner workings of citizens' minds and their daily habits, but that is exactly what many digital platforms facilitate. As Elise Italiano recently wrote, "Instead of getting devices into the hands of every student, a more discerning integration of technology in the learning process should be considered."<sup>2</sup>

She points out that education technology can personalize education, provide more information to students far faster, and help students become more engaged in their work—but it can also lead students to expect constant entertainment, and disconnect them from themselves and from living, breathing relationships. Nor has it yet been demonstrated that such digital learning significantly improves student achievement. This paper explains how it can distract from the work of real education, endanger people's property and privacy, and distort the relationship between U.S. citizens and their governments.

### **The Technocratic Vision: From Dewey to Tucker to Duncan**

The thirst for ever-increasing amounts of data springs from political theory that has been around for well over a century. From the early days of the Progressive Era, certain intellectuals and others in the United States rejected a foundational principle that underlies the American constitutional structure: that government should be strictly limited by the separation of powers and federalism. These Progressives believed the world had changed so much since 1787 that the constitutional structure created for that time was no longer adequate. A modern, industrialized state called for a modern, technocratic government, in which government experts would be tapped to address increasingly complex challenges.<sup>3</sup> The authority of the individual must be diminished, because he or she simply does not possess the expertise to effectively address modern problems. Experts armed with sufficient data offer the best hope for societal success.

This Progressive viewpoint has heavily influenced state education systems from their

earliest days, most notably through the work of John Dewey and his disciples. Dewey disdained the authority of parents over their children's education, believing students needed to be liberated from the "prejudice" of tradition and religion, which parents usually pass down.<sup>4</sup> Instead, experts should insert themselves between parents and children and assume control of education. The goal was to transform not only education, but society itself, by socializing students to reject individualism (what Dewey believed to be "selfish ambition") and to replace competition with cooperation.<sup>5</sup>

As the 20th century wore on, the advent of data-driven decision-making ("D3M") as a business model gave the Progressives more philosophical and technical tools to implement their vision. Although D3M flowered in the 1980s and 1990s, especially with its successful adoption by Japanese automakers, it had its roots in the "Total Quality Control" theory advanced by General Electric employee Armand Feigenbaum in 1951.<sup>6</sup> American industry increasingly turned to this more "technocratic" approach of using data systems and statistics to inform management decisions.<sup>7</sup>

As states began to copy this business model and experiment with its application to education, it became apparent that the technocratic approach fit the Progressive education philosophy. Adherents to the view that experts should assume more societal control began to combine education and economic planning into a model in which the former serves the latter. If data could be used to improve business, why not education as well?

A representative figure in this vision, especially in the modern era, is Marc Tucker.

As president and CEO of the National Center on Education and the Economy (NCEE),<sup>8</sup> Tucker has advocated relentlessly for a centralized workforce-development model of education, as opposed to the citizenship model on which state constitutions rest the foundation of public education. Perhaps his best-known position statement on this issue is "A Human Resources Development Plan for the United States,"<sup>9</sup> drafted as a set of recommendations for the incoming Clinton administration in 1992. This paper explicitly outlined the "human resources" system government should create and administer, and education's role in that system. For many, it described a dystopia of centralized control, planned economic development and, necessarily, sweeping data-compilation and -sharing. (The recommendations from this report were repeated in the famous "Dear Hillary" letter, written by Tucker and others to Hillary Clinton upon her husband's election to the Presidency in 1992.<sup>10</sup> As discussed below, signatories to this letter are still active in pursuits such as advocating for the Common Core State Standards Initiative.)

Like the earlier Progressives, Tucker argued that an economy left to develop on its own, with minimal planning and maximum individual freedom, is inadequate to realize society's full potential as envisioned by the "experts." He thus advocated a "seamless system of unending skill development that begins in the home with the very young and continues through school, postsecondary education, and the workplace."<sup>11</sup> The focus of his plan was defining work skills and establishing a bureaucracy that directs employers to the workers who have those skills. Under this model, the rights of the individual to determine his own career would necessarily yield to the determination of

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(quite fallible) experts about the needs of the economy.

As outlined in “A Human Resources Development Plan,” Tucker’s vision included the following elements:

- Imposing national standards of education and skill-development;<sup>12</sup>
- Restructuring schools so students earn access to postsecondary education (primarily professional and technical programs) by achieving certain benchmarks under these standards;<sup>13</sup>
- Establishing a National Board for Professional and Technical Standards to establish uniform standards for a variety of occupational categories and administer the exam system through which all students must pass to earn certifications;<sup>14</sup> and
- Establishing a “labor market system” in which “[a]ll available front-line jobs—whether public or private—must be listed,” and in which a series of “labor market boards” will coordinate “job training, postsecondary professional and technical education, adult basic education, job matching and counseling.”<sup>15</sup>

Again, there is no mention of the “workers” rights to self-determination.

The role of elementary and secondary education in this system “starts with standards” that would be imposed by a national board.<sup>16</sup> These standards—and the attendant curricular resources, reorganization of schools for skills development, and professional development to train teachers how to operate in this system—would be implemented primarily through “invi[ng]

the states to submit proposals in a [federal] competitive grant program” and then awarding grants to the winning states.<sup>17</sup> In other words, this system would be imposed exactly as the Common Core State Standards were imposed through the federal Race to the Top (RttT) program (see below).

### **Outcome-Based Education, Round One**

At the macro level, Tucker advocated a sweeping system of workforce development. Shortly after he publicized his plan, Congress contributed to the effort with the School-to-Work Opportunities Act of 1994. This Act was designed to “make education relevant to students’ future careers . . . and ensure that students learn the habits and skills that employers value.”<sup>18</sup> Thus did Congress endorse the education-as-workforce-development model.

At the school level, Tucker advocated essentially what was known as Outcome-Based Education (OBE). Although OBE meant different things to different people, the core of the Tucker vision was that the school system would establish centrally defined “outcomes” that students should meet before progressing to the next level.<sup>19</sup> The OBE movement to some extent grew out of Benjamin Bloom’s “mastery learning” concept, which posited that “[g]iven sufficient time (and appropriate help), 95 percent of students . . . can learn a subject up to high levels of mastery.”<sup>20</sup> But while mastery learning focused more on academic content, OBE took a different turn.

While OBE as originally posited had a certain appeal—who could argue with requiring a student to demonstrate he had learned what he should have learned?—in practice,

the concept morphed into a method of Progressive social engineering. OBE became “transformational OBE.” As described by its advocate William Spady, transformational OBE required school systems to establish exit outcomes far beyond content knowledge, to include “orientations (affective and attitudinal dimensions of learning) [deemed] critical for assuring success.”<sup>21</sup> Bloom himself stated in 1981 that the purpose of education is to “change the thoughts, feelings and actions of students.”<sup>22</sup> In the states that embraced transformational OBE, the typical desired outcomes were:

vaguely worded and show[ed] little concern for core academic content. They [were] largely in the affective domain. They describe[d] mental processes such as attitudes, dispositions, and sentiments—behavioral and social outcomes rather than knowledge, skills, and other cognitive outcomes.<sup>23</sup>

In other words, the goal of the reformers was not to impart knowledge, but to shape the student into the kind of person “experts” believed had the skills necessary for success in the global economy. Former U.S. Secretary of Education William Bennett summed it up: OBE became “a Trojan Horse for social engineering, an elementary and secondary school version of the kind of ‘politically correct’ thinking that has infected our colleges and universities.”<sup>24</sup>

As discussed later in this paper, OBE’s focus on non-academic traits has been replicated in the approach of the Common Core national academic standards.

By 1992, school districts in 19 states and Canada had adopted some form of OBE.<sup>25</sup> An early experiment in OBE took place in

Chicago in the 1970s but was abandoned after test scores plummeted.<sup>26</sup> As parents became more familiar with this “reform,” many rose to protest the attempt at reshaping their children (the fights in Pennsylvania and Minnesota were especially contentious).<sup>27</sup> Though the OBE experiments were for the most part scuttled, the idea did not die. Instead, Tucker urged essentially this same model of education in the plan he submitted to the president-elect and Hillary Clinton in 1992.

Creating and implementing this system could only be accomplished, of course, through the enforcement authority of government (often through partnerships with non-governmental organizations that are not subject to open records and meetings laws). “Government at every level has an enormous potential for affecting a nation’s *human capacity*—from the resources it provides to nourish pregnant women to the incentives it provides to employers to invest in the skill development of their employees” (emphasis added).<sup>28</sup> There was little in this plan that acknowledged individuals; instead, American citizens are merely “human capital,” to be leveraged for purposes of economic development. The language used could as easily be applied to a herd of cattle. Both cattle and humans affect the economy, and it is government’s job to leverage them appropriately.

### **Data, the Lifeblood**

Nor could this system function without the lifeblood of data. If every student must progress through national standards, national tests, and multiple layers of a professional- and technical-education system; if every one of millions of entry-level jobs must be listed on a national registry; if “counselors” are to match millions of applicants with jobs based

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on the applicants' skills, then the system for collecting and sharing data would have to be enormous. Indeed, although the plan did not explore the issue in depth, it listed some of the types of data that different groups would have to compile, including "characteristics" of the students. It further noted that states would have to develop a "computer-based system for combining this [and other] data at local labor market board offices with employment data from the state so that counselors and clients can look at programs offered by colleges and other vendors in terms of cost, client characteristics, program design, and outcomes, including subsequent employment histories for graduates."<sup>29</sup> A system that tracks the "very young" through the "workplace" would have to rely on robust data pools.

But what relevance does a 20-year-old report have to public school education today? Simply this: The report may be old, but the ideas it contains are continually recycled.

As mentioned, one pillar of Tucker's workforce-development plan was to establish national standards and tests in American schools. Beginning in 1991, Tucker's National Center on Education and the Economy directed the New Standards project, created to promote standards-and-assessments-based educational transformation in the United States. According to NCEE, "[m]any of the leaders in the New Standards work went on to play leading roles in the development of the Common Core State Standards, which built in part on the foundation laid by New Standards."<sup>31</sup> The New Standards veterans also joined the developers of the national testing consortia.

Common Core is the current vehicle through which a version of Tucker's workforce-

development plan is being implemented. By offering states that adopt these national standards in English language arts and mathematics the chance to win federal RttT grants, the United States Department of Education (USED) is enforcing a plan of educational homogenization throughout the country.<sup>32</sup> That education philosophy, consistent with Tucker's, is education-as-workforce-development.<sup>33</sup> A more recent report from NCEE, "Tough Choices or Tough Times,"<sup>34</sup> also urged national standards and assessments and was influential in the movement to develop the Common Core standards and the aligned national testing consortia.<sup>35</sup> The focus of this report was that America's economic competitiveness depends on remaking its education system. Again, the only cited purpose of education was developing the workforce.

Tucker himself served on the development team for the Common Core English standards<sup>36</sup> and is an enthusiast for the national standards (as a "good start"),<sup>37</sup> as would be expected given that his entire education blueprint for workforce-development began with national standards imposed through a federal program of competitive grants. Another signatory to the "Dear Hillary" letter played a more prominent role in the creation of Common Core. Michael Cohen is now president of Achieve, Inc., which not only was one of the developers of Common Core, but also created one of the Common Core-linked national testing consortia, the Partnership for Assessment of Readiness for College and Careers (PARCC).<sup>38</sup> Clearly, Common Core had its roots in technocratic workforce-development.

This passage from a recent report from the Postsecondary Electronic Standards Council

(PESC), an organization founded in 1999 by USED, private vendors, higher-education organizations, and others to facilitate collection and sharing of data across the education spectrum and into the workforce, illustrates the mindset prevalent among those who are crafting educational data systems:

The public workforce system is a network of federal, state, and local offices that function to support economic expansion and facilitate the development [of the] United States workforce. The system is designed to create partnership with employers, educators, and community leaders in order to foster economic development and high-growth opportunities in regional economies so that businesses find qualified workers to meet their present and future workforce needs.<sup>39</sup>

This description bears little if any resemblance to the free-market system that built the United States: individuals and businesses responding to the needs of markets and to their own personal aspirations, largely unencumbered by government. It also bears little resemblance to the country's original model of local schools operated by local communities, often private in origin, funding, and control.<sup>40</sup> The passage does, however, present a good description of the role of education as workforce-development in a centrally planned economy.

The remainder of the report discusses the importance of data-sharing to building this managed-economy model.

The Common Core initiative also in many ways reaches back to the century-old philosophy of John Dewey. As discussed later in this paper, the new national standards

diminish the acquisition of academic knowledge in favor of so-called “21<sup>st</sup>-century skills,” which are simply “outcomes” now relabeled “competencies.” Common Core is essentially OBE, round two. The standards thus facilitate the kind of transformational, Progressive education Dewey advocated.

Everything old is new again.

### **The Fallacy of Technocratic Presumptions in Education**

Before advancing further, it is worth pausing to reconsider Progressive and technocratic presumptions about the ability to chart “useful” paths in education through ever-increasing data-collection and -use. A thorough discussion of this issue is beyond the scope of this paper. However, much evidence suggests more data will not guarantee good research. As documented by former Columbia University Teachers College President Arthur Levine, the education community has, for many reasons (poor doctoral curricula, uncertain research standards, *etc.*), a weak record of producing accurate and useful research.<sup>41</sup> If the “experts” do a poor job with the data they have now, why would giving them more improve the results?

Richard Innes of Kentucky's Bluegrass Institute warns that the deficiencies of much educational research augur against ramping up data-collection efforts. “The presence of more data has not necessarily provided the public with better insight. In fact, it has more likely led to considerable misunderstanding. Education needs to get its research on a much more solid basis before we go creating hugely intrusive databases with more information that is as likely to be misused as not.”<sup>42</sup>

Heedless of such warnings, the promoters of more data-collection forge ahead.

## **Statutory and Other Inducements for Sweeping State Data Systems**

Accompanying Common Core and national testing, and undergirding their influence, is a thickening network of student databases, largely pushed on states by the federal government. Federal law prohibits USED from maintaining a national student database.<sup>43</sup> Since the absence of a national database impedes efforts to track citizens and manage the economy by manipulating the workforce, the federal government has for years been building the statutory structure to evade this prohibition. In fact, the law that essentially created the federal role in education also called for databases to monitor compliance with federal law in exchange for federal funds.<sup>44</sup> The federal structure now incentivizes states to build identical—and therefore sharable—data systems, enabling a *de facto* national database.

### **Education Technical Assistance Act**

Congress began the federal “encouragement” of state data-system construction in 2002 with the Educational Technical Assistance Act.<sup>45</sup> One provision of this statute established the Statewide Longitudinal Data Systems (SLDS) grant program to help states design and implement student-data systems. Through four rounds of grant awards, the federal government has disbursed \$515 million to 41 states and the District of Columbia for SLDS enhancement.<sup>46</sup>

### **America COMPETES Act**

In 2007 Congress took the next step in creating a *de facto* national student database by enacting America COMPETES (the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act).<sup>47</sup> Among

many provisions supposedly designed to increase American competitiveness in STEM categories (science, technology, engineering, and mathematics), America COMPETES authorized grants to states to further develop their P-16 (preschool through baccalaureate degree) SLDS. The statute also specified required elements of each state’s SLDS, including the ability to share data from preschool through postsecondary education data systems.<sup>48</sup> Presaging Common Core and the national testing consortia, the Act’s database section also required states to change “state academic content standards and assessments” to align with “the demands of higher education, the 21<sup>st</sup>-century workforce, and the Armed Forces.”<sup>49</sup>

Although America COMPETES did not require data sharing among states or between states and the federal government, it created the structure through which such sharing would be more easily accomplished. Using America COMPETES grants, all states would build SLDS that were essentially identical in 12 important aspects, making data more accessible and sharable across state lines.

### **American Recovery and Reinvestment Act (Stimulus Bill)**

The third round of SLDS grants took place through the 2009 American Recovery and Reinvestment Act (the “stimulus” bill). That legislation, theoretically designed to pull the American economy out of a deep recession, created a State Fiscal Stabilization Fund from which grants were made to struggling states—as long as they agreed to use the money to “establish and use pre-K-through-college and career data systems to track progress and foster continuous improvement . . . .”<sup>51</sup> This legislation expanded the requirements for state SLDS, mandating that grantee

states track children “from early childhood through the start of a young adult’s career.”<sup>52</sup> An essential element of Marc Tucker’s birth-through-career tracking system was thus put in place.

The fourth round of SLDS grants, also funded through the stimulus bill, came in 2009, when USED used \$4.35 billion to create the RttT grant program. That program offered states the opportunity to win some of their taxpayers’ funds back in exchange for adopting Obama administration policy priorities. Among other mandates (such as adopting Common Core and national assessments aligned with it, in contravention of three federal statutes that prohibit federal supervision or direction of curriculum or testing<sup>53</sup>), RttT made it a “priority” that the applicant state agree to “expansion and adaptation” of its SLDS.<sup>54</sup> Through RttT, USED advocated sweeping data systems:

The Secretary is particularly interested in applications in which the State plans to expand [SLDS] to include or integrate data from special education programs, English language learner programs, early childhood programs, at-risk and dropout prevention programs, and school climate and culture programs, as well as information on student mobility, human resources (i.e., information on teachers, principals, and other staff), school finance, student health, post-secondary education, and other relevant areas, with the purpose of connecting and coordinating all parts of the system to allow important questions related to policy, practice, or overall effectiveness to be asked, answered, and incorporated into effective continuous improvement practices.<sup>55</sup>

The desirability of having all states build essentially identical systems was also emphasized: “The Secretary is . . . particularly interested in applications in which States propose working together to adapt one State’s [SLDS] so that it may be used, in whole or in part, by one or more other States, rather than having each State build or continue building such systems independently.”<sup>56</sup>

This feature, of course, allows USED to evade the statutory prohibition against maintaining a national student database by enabling and encouraging identical state systems to share data.

USED expanded its data requirements through the RttT Early Learning Challenge (ELC), a \$500 million competition authorized by the stimulus bill and sponsored jointly with the Department of Health and Human Services. Announced in 2011, ELC was designed to increase the number of children from birth through age five enrolled in a government pre-K program (instead of being at home with family or in private childcare).<sup>57</sup> Among other requirements, applicant states were judged on their commitment to “building or enhancing data systems to monitor the status of children’s learning and development from preschool through third grade . . . .”<sup>58</sup> These data systems had to contain certain “essential elements,” including child and family demographic information and measures of “language and literacy development, cognition and general knowledge (including early mathematics and early scientific development), approaches toward learning, physical well-being and motor development (including adaptive skills), and social and emotional development.”<sup>59</sup> And the states had to demonstrate a “unique statewide child identifier or another highly accurate,

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proven method to link data on that child . . . to and from the Statewide Longitudinal Data System . . . .”<sup>60</sup>

One goal of enhancing early-childhood data systems is to address the “problem” that most preschool children are either at home or in private programs rather than being enrolled in government programs of some kind, meaning government doesn’t have access to all existing preschool records. As noted by the State Core Model (developed by the Council of Chief State School Officers, or CCSSO, which is one of the developers and copyright owners of the Common Core national standards), the federal government is seeking to change this:

Many states are beginning to build and implement [Early Childhood Education] data systems that pull longitudinal data from across the various parts of the ECE landscape. Federal supports for state policymakers’ efforts to build these systems include the development of State Advisory Councils on Early Childhood Education and Care, as well as the inclusion of EC linkages in SLDS Grants, State Fiscal Stabilization Funds, and Race to the Top grants.<sup>61</sup>

So the federal government has been incentivizing SLDS for years and continues to expand the boundaries of the data required to be collected and shared. In the early stages of RttT development, United States Secretary of Education Arne Duncan was explicit about his goal of being able to track individual students through their careers so career outcomes (such as earnings) could be tied to educational programs:

Hopefully, someday, we can track children from preschool to high school and from high school to college and college to career. . . . We want to see more

states build comprehensive systems that track students from pre-K through college and then link school data to workforce data. We want to know whether Johnny participated in an early learning program and completed college on time and whether those things have any bearing on his earnings as an adult.<sup>62</sup>

To know all this, of course, we have to know pretty much everything Johnny does, throughout his lifetime.

Duncan also wants to “unleash the power of data” for general research.<sup>63</sup> Although acknowledging privacy concerns, he dismisses such worries with a passing and ineffective nod to “anonymizing” data.<sup>64</sup> The shortcomings of this approach are discussed later in this paper.

Secretary Duncan’s enthusiasm for increasingly open data is shared by Todd Park, the White House’s chief technology officer (who previously held the same position at the Department of Health and Human Services). At a USED-sponsored October 2012 “Datapalooza” conference, Park said, “You take the data that’s already there and jujitsu it, put it in machine-readable form, let entrepreneurs take it and turn it into awesomeness.”<sup>65</sup> What entrepreneurs consider “awesome” may be less so to American parents.

### **P-16/20 Councils and P-20W Systems**

To help achieve the ultimate goal of channeling “human capital” toward the industries that need it, USED also encourages states (primarily through federal grants) to establish P-16 or P-20W councils.<sup>66</sup> The “P” refers to preschool; “16” to senior year of college; and “20” to either graduate school or the early years in the workforce. As advocated

by the Data Quality Campaign (discussed later in this paper), these councils are most effective when they administer a system of data-collection that allows each individual to be tracked from early childhood throughout his career<sup>67</sup>—for his own benefit, of course.

Remarkably, not every Progressive education official is content to wait until a child enters preschool to start monitoring him and his family. The “P” in this scenario could refer to “prenatal.” In Oregon, for example, Deputy School Superintendent Rob Saxton urged “thinking about education from the time that a woman . . . is pregnant, so prenatal, and just like: what their nutrition looks like, what their exercise looks like, what kind of education we can provide working around the child.”<sup>68</sup> Of course, to expand their jurisdiction to early-childhood education, state departments of education will have to collect data on those unborn children and their families.

At this writing, USED’s Early Learning Policy doesn’t cover prenatal activity, but it does begin with “birth.”<sup>69</sup> For the federal government, then, data would be considered relevant to a child’s education as soon as he draws his first breath. This paper discusses such initiatives in more detail later.

### **Public-Private Collusion**

Influential trade groups active in education issues are also leading advocates for increased data-collection and -sharing. For example, CCSSO has recruited state leadership into the Education Data & Information Systems Initiative.<sup>70</sup> The leaders of CCSSO are open about their orientation and plans:

Here at the Council, we are strong advocates for next-generation data collection and use. The Information Systems and Research Initiative animates

the national conversation on developing new information systems, measures, and indicators for education that will far surpass anything this nation—or any other nation—has created before.<sup>71</sup>

This hitherto unimagined data system will be used to “[I]ead . . . collaborative state, national, and international efforts to examine trends and patterns in education.”<sup>72</sup> Collaboration among states and even nations suggests data-sharing among these “partners.” Other public-private initiatives are described later in this paper.

Not surprisingly, Microsoft founder Bill Gates, whose Bill & Melinda Gates Foundation is the chief philanthropic and private financial force behind the Common Core standards, advocates greater collection and use of student data:

All states and districts should collect common data on teachers and students. We need to define the data in a standardized way, we need to collect all of it for all of our students, and we need to enter it in something cheap and simple that people can share.<sup>73</sup>

In the area of data-collection, the alliance of these and other private organizations and the federal government is powerful indeed. And Gates’s desire to assemble data in something “cheap and simple” would rule out robust data-protection systems, which are neither.

### **Student Data: Beyond Names and Test Scores**

#### **What Data Do Schools Collect?**

Every school collects information about its students, and often on their families, much of which is required by myriad laws and regulations such as those outlined in this

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paper. Each student's file contains items such as emergency contact number, allergies or medical conditions, home address, and often personal information such as Social Security numbers. Much of the data points are necessary for the school to work with a child's parents and needs. Because schools have become far more than education institutions, with many now including medical care and psychological treatment, the information they collect about children can be extremely sensitive.

For example, nearly all states have enacted anti-bullying laws, and many require schools to record student behavior in state databases.<sup>74</sup> Under both federal and state mandates, schools also often administer "school climate" surveys that ask students questions about drug use, criminal behavior, sexual activity, whether they have books at home, and more.<sup>75</sup> Another example: Federal law requires schools to create and monitor Individualized Education Plans, a document laying out how a child with special needs will be educated. These include medications, behavior analyses, academic and psychological test results, personal observations from teachers and parents, and treatments that include counseling and therapy. They also record where the child transitioned after school—to independent living, employment, a medical facility, and so forth.<sup>76</sup> Nationally, 13 percent of children have an IEP.<sup>77</sup>

Most schools have a school nurse, and approximately 2,000 school-based health centers exist around the country. These are essentially in-school health clinics that offer primary medical and dental treatment, mental and behavioral treatment, substance-abuse counseling, and health education.<sup>78</sup>

Like all medical facilities, these collect patient information and record treatments, but that information may not be kept at the school level.

In New York, for example, parents who allow their children to receive medical treatment at school sign a waiver allowing the health center to release their child's medical information to the state department of education.<sup>79</sup> The parental-consent form notes: "By law, parental consent is not required for the conduct of mandated screenings, the application of first aid treatment, prenatal care, services related to sexual behavior and pregnancy prevention, and the provision of services where the health of the student appears to be endangered. Parental consent is not required for students . . . who are parents. . . ." While parents can decide to revoke their consent, "after a disclosure has been made, it cannot be revoked retroactively to cover information released prior to the revocation."<sup>80</sup>

Massachusetts parents must sign a similar disclosure to have their child visit school-based health centers. One such consent form requires parents to agree that information about their child collected in the health center, including "but not limited to medical or mental health information," may be released to the child's school "and its agents."<sup>81</sup> As this paper discusses later, such arrangements make a child's most personal information available to practically anyone schools and government agencies choose.

The amount of information a school collects on a given child depends on the services that child receives at school. It may be merely state- and federally mandated basic information such as age, grade, home address, test scores, and demographic information, or it may

encompass far more personal information such as psychological and medical records. The American Civil Liberties Union has noted:

According to the Fordham Center on Law and Information Policy, which reviewed the state data collection practices on K-12 students in all 50 states, data collected by particular states includes pregnancy, mental health information, criminal history, birth order, victims of peer violence, parental education, medical test results, and birth weight. The study also found that information was not being handled in compliance with current law, and that there were no clear rules for accessing the information.<sup>82</sup>

The amount and scope of data schools must collect is growing rapidly. As detailed later, and despite insistence from state officials otherwise, Common Core testing demands “student-level” data from states and schools, which is different from the aggregate information schools have previously collected under federal accountability mandates.

California schools are among the first to encounter demands for “student-level data” because of “upgrades” to the state database, which are happening within state databases nationwide. Because of demands for individual student information, school districts have had to obtain parents’ Social Security numbers and signatures and to visit homes to verify information.<sup>83</sup> The push for more and more data is intense.

### **Data-Collection Initiatives**

Current public and private education data initiatives focus mainly on four goals: expanding the amount of data collected, putting data in consistent forms, easing the

transmission of information schools collect to various government agencies and private interests, and making it easier to search and sort digital education materials.<sup>84</sup> Here are some noteworthy such initiatives, with a particular focus on those that expand the data collected.<sup>84</sup>

### **National Education Data Model**

Several initiatives have begun to guide schools about the type of data they could collect. The National Education Data Model (NEDM), from the federal government’s National Center for Education Statistics (NCES), offers schools and states a template of some 416 “attributes,” as well as other possible data points, to record about each child. These include religion, family income, bus stop times, voting status, health insurance, and medical information.<sup>85</sup> Because of how comprehensive NEDM is, Innes characterizes the NEDM as a proposal for “digital DNA,” in the sense that there are so many things the database would record about an individual child that no two people could possibly have the same record. Given this reality, it is unrealistic to pretend such information can be rendered anonymous. Wisconsin, for one, is already phasing in NCES taxonomy for student course titles, a project the state told the federal government has “long-range implications for the development of longitudinal database systems.”<sup>86</sup> Arkansas<sup>87</sup> and Michigan<sup>88</sup> are among the states shifting their data systems over to the NEDM template.

### **Data Quality Campaign**

The Data Quality Campaign (DQC) is a national initiative that works with federal and state governments to implement its ideal policies and publicizes how close states are to fulfilling its recommendations. The 2009

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stimulus bill required every state to build a longitudinal student data system that includes all 10 DQC recommendations as a condition for receipt of federal stimulus grants.<sup>89</sup> The recommendations include giving each student a personal identification number, providing “student-level” information rather than aggregate data commonly requested by researchers and state education accountability laws, collecting student transcript information, and developing the ability to have K-12 data systems communicate with higher-education and workforce databases.

DQC justifies its recommendations and activism with the “college- and career-ready” rhetoric that is currently in vogue: “Expectations to graduate every student college and career ready require unprecedented alignment of policies and practices across the early childhood, elementary, secondary, and postsecondary education, and workforce sectors,” asserts a recent DQC report. “Now is the time to harness the power of data for improved decision-making that will foster continuous improvement to ensure all students are prepared for college and careers.”<sup>90</sup> The report approvingly notes that the federal government’s rapidly increasing funding and mandates around data-collection have accelerated state data-collection in the past decade.<sup>91</sup>

A March 2011 report prepared by DQC and two other groups for AT&T urges allowing a full spectrum of stakeholders to feed at the trough of education data: “The next frontier is to ensure educators, policymakers, and external stakeholders are maximizing these new tools to improve decision making and student achievement, and there is still much work to be done. First, data must be linked across states, districts, and multiple

agencies, and among educational institutions and employers . . . .”<sup>92</sup>

The report advocates sharing of “student data across the human pipeline.”<sup>93</sup> Although it gives the usual nod to complying with privacy laws, it predicts (accurately) a loosening of those laws on the federal level.<sup>94</sup> More about this later.

DQC acknowledges that Common Core and robust data-collection go hand in hand. DQC envisions a future in which states use data-collection and analysis to “refine the Common Core standards and assessments over time,” “use the new Common Core state assessment data to identify and share best practices and allocate resources accordingly,” share “data across state lines to answer critical questions that inform policy and practice,” and “evaluate the effectiveness of college- and career-ready policies and programs to better inform policymakers’ decision making and resource allocation.”<sup>95</sup> Essentially, it envisions using data collected on children to change curriculum, testing, and school finance.

DQC is funded by the Gates Foundation, the Michael and Susan Dell Foundation, the Alliance for Early Success, AT&T, and Target. It is a member of the Common Education Data Standards consortium (discussed later), another organization involving district, state, and federal agencies along with higher-education institutions. Their goal is to have everyone using the same data definitions and formats to streamline national data-collection and analysis.<sup>96</sup>

### **Starting Well Before Kindergarten**

This paper has already mentioned the federal push to expand the data governments collect to start at birth and include even parent

characteristics (pp. 12-13). This is becoming evident in the states as well. In April 2014, Illinois Gov. Pat Quinn held a symposium co-sponsored by Common Core generator National Governors Association (NGA) to emphasize that “college and career readiness begins at birth.”<sup>97</sup> Quinn asked state lawmakers to spend \$1.5 billion over five years on a Birth to Five initiative that includes more spending on prenatal care and (very) early-childhood education. The keynote presentation was titled “Setting the Stage for a Birth to Third Grade Education Continuum.” California activists are also working to create a birth through age 5 “comprehensive early learning system.”<sup>98</sup> On March 24 and 25, 2014, they held a Sacramento symposium on government programs beginning at birth. It featured *New York Times* columnist Nicholas Kristof and a video address from Hillary Clinton. The Democratic caucus in California’s Assembly aims to pass legislation in line with their goals.

A central network for such efforts is the Early Childhood Data Collaborative (ECDC), which combines the efforts of the University of California at Berkeley’s Center for the Study of Child Care Employment, CCSSO, NGA, the Data Quality Campaign, the National Conference of State Legislatures, PreK Now, and Child Trends.<sup>99</sup> ECDC released a February 2014 report finding that only Pennsylvania, so far, links “child-level data” across all early-education programs and its K-12 system, but nearly every other state plans to create such linkages in the near future.<sup>100</sup> This requires using a unique student ID number, which some states generate using birth certificates.<sup>101</sup> The comprehensive type of data ECDC encourages states to collect includes body-mass index, developmental

screenings, and information collected from home visits.<sup>102</sup> Thirty states currently link some early-childhood data to K-12 data and, thanks to federal prodding through SLDS grants and Head Start funding, nearly all plan to expand and centralize their data-collection on small children.<sup>103</sup> A bipartisan preschool expansion bill in Congress right now, titled the “Strong Start for America’s Children Act,” would require states to tie early-childhood data to K-12 systems.

“Data on young children are housed in multiple, uncoordinated systems, managed by different state and federal agencies,” the report complains.<sup>104</sup> It envisions collecting data about small children from health, education, and social service agencies, among others, into one easily accessible file. The “action items for policymakers” the report envisions include the following: “Strengthen states’ capacity to securely link data on young children across all state and federal programs,” “Expand state efforts to collect, link, and use screening and child assessment data, including kindergarten entry assessments,” and “build fully coordinated longitudinal ECE data systems.”<sup>105</sup>

The report claims policymakers need to collect such data to provide “a complete picture of *their state’s* young children” to “identify service gaps” (emphasis added).<sup>106</sup> The thinking is clear: Governments exist to cater to everyone’s felt needs, starting from birth. In this vision of the world, citizens are never-emancipated wards of the state.

### **Collecting Transcripts, Graduation Data**

At the other end of the education spectrum, the National Student Clearinghouse (NSC), also funded by the Gates Foundation, has access to student enrollment and graduation

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data for 96 percent of all students in U.S. higher-education institutions. It also collects the high school and college transcripts of millions of U.S. students. It uses this information to confirm student enrollment and degrees for the federal government, businesses, and higher-education institutions, and for longitudinal education research.<sup>107</sup> USED, for example, uses the clearinghouse to verify that a person applying for a federal student loan is actually enrolled as a student. (This data-collection does not, however, actually ensure that only students receive federal student loans. One estimate says Pell Grant fraud alone costs taxpayers \$1 billion per year.<sup>108</sup>) NSC also tracks students for high schools and colleges to provide the institutions with reports on how many receive further education, for how long, and in what setting, and how many students get jobs after graduation, where, and when. Although the clearinghouse claims to maintain these records in compliance with federal student-privacy law, this paper will explain later how that law has been re-engineered, rendering it almost worthless.

### **Common Core Tests**

The exact data schools and states will collect in conjunction with forthcoming Common Core national tests is open-ended and unknown, beyond obvious information such as student test scores, test responses, and some sort of individual identifier. The two Common Core testing groups are called the Partnership for Assessment of Readiness for College and Careers (PARCC), which at this writing will test children in 15 states and Washington, D.C., and the Smarter Balanced Assessment Consortium (SBAC), which currently plans to test children in 24 states. According to recent meeting notes from SBAC's executive committee, the consortium appears to be

privately circulating a draft privacy policy.<sup>109</sup> To these authors' knowledge, SBAC has not publicly released any student data privacy policy, although information from more than three million students is already being sent to SBAC as a result of its practice tests this spring.<sup>110</sup>

PARCC has, however, published its data-privacy policy. The policy confirms that PARCC and its contractors will collect personally identifiable information (PII) on students, subject to Family Educational Rights and Privacy Act of 1974 (FERPA) protections,<sup>111</sup> which, as this report explains in its next section, actually provide little protection. This PII, PARCC says, "includes, but is not limited to" the student's name, parents' names, address, date of birth, and mother's maiden name.<sup>112</sup> PARCC's privacy policy includes two helpful but inadequate protections for student data: It "shall not be used for commercial purposes"<sup>113</sup> and PARCC will not collect student Social Security numbers.<sup>114</sup>

Although it's not certain what types of data PARCC may ultimately collect, SBAC's data-collection will almost certainly extend beyond names, demographic data, and test scores. SBAC has said it may test for non-academic "self-management skills" such as "time management, goal-setting, self-awareness, persistence, and study skills,"<sup>115</sup> so such attributes would also be included in its databases.

SBAC intends to create "a centralized data repository...where all student responses and professional development materials will be housed and all test results and other information will be generated and reported."<sup>116</sup> PARCC is constructing a similar national student database, which will both receive data

from and feed it to state databases, according to PARCC's cooperative agreement with the federal government.<sup>117</sup>

Every state that joined one of these federally funded Common Core national test consortia essentially wrote these organizations a blank check which they are, by contract, allowed to cash for whatever student information they wish to demand. Both consortia have committed, under their cooperative agreements, to “make student-level data that results from the assessment system available [to USED] for research” and other purposes.<sup>118</sup> They have further committed through their agreements to “provide timely and complete access to any and all data collected at the State level to [USED]” and any agencies or organizations USED designates.<sup>119</sup> PARCC's internal privacy policy—promulgated in response to the unexpected outcry about threats to student privacy through the Common Core tests—appears to prohibit sending data to the federal government: “PII will never be provided by PARCC to the federal government without written authority from a state, or unless legally required to do so by subpoena or court order.” But states have already provided such written authority in their agreements with the consortia by agreeing to be bound by PARCC and SBAC's assurances to the federal government in their RttT applications.<sup>120</sup> In any event, an internal policy cannot take precedence over the cooperative agreement between the consortia and USED—which agreements make it clear that USED will have ongoing access to all student-level data collected in connection with the testing.

The (in some cases undefined) power of the Common Core assessment consortia has prompted concern about what, in fact, the

member states have agreed to do. Florida's Senate President and Speaker of the House in July 2013 complained publicly that PARCC, which at that time Florida helped lead, had not listed what student data it will demand of states, and had no plans to do so until 2014, the year the tests arrive in schools.<sup>121</sup> Also of concern is the requirement that states have laws that comply with PARCC's privacy policy: “Each member state, in signing a data agreement with PARCC, Inc. warrants that (a) the data privacy and security provisions of this Policy comply with its state law and (b) it will promptly notify PARCC, Inc. and PARCC Contractors in writing of any changes in state law that affect the provisions of this Policy.”<sup>122</sup>

Even more disturbing is that participating states have promised to demand the removal of any state laws that stand in the way of implementing the Common Core tests: “[each state] will conduct periodic reviews of its State laws, regulations, and policies to identify any barriers to implementing the proposed assessment system and address any such barriers prior to full implementation . . . .”<sup>123</sup> This may easily include state student-privacy laws, and certainly will if these laws impede the flow of data across state lines and among government agencies. A proposed privacy law prohibiting schools and state agencies from sending student information out of state would have kept student data from going to Oklahoma's existing out-of-state testing contractor, state Department of Education officials complained this spring.<sup>124</sup>

Further, PARCC, SBAC, CCSSO, and the State Educational Technology Directors Association are creating a digital taxonomy for the standards “to ensure the sharing of standards-alignment information across

systems.” This taxonomy has two main goals: to link particular education materials with specific standards so people in different states can share and find them, and to make the two Common Core tests digitally comparable. The latter is a federal grant requirement.<sup>125</sup> In short, both national Common Core testing groups have a license to collect unspecified student data from states and the consortia may insist on removing any state laws or policies that would impede such collection. The consortia will be feeding this information into national databases, correlating their tests and databases, and granting full database access to the federal government.

In an effort to quell concerns about this testing-related data collection, 34 state superintendents signed a January 2014 letter to U.S. Education Secretary Arne Duncan insisting that the Common Core testing “consortia will not share any personally identifiable information about K–12 students with USED or any federal agency... our states will not provide such information to USED and...everything we have said here is consistent with our understanding of the cooperative agreement between the consortia and USED.”<sup>126</sup> These statements flatly contradict the cooperative agreements the Common Core testing organizations have signed with the federal government, as shown above. Through those agreements, states made political commitments to change state laws, regulations, and policies<sup>127</sup>; a letter is a weak rebuttal, especially where, as here, its authors are themselves public officials. In any event, state superintendents do not control the consortia directly, so they have no power to overrule what the consortia decide in cooperation with the federal government.<sup>128</sup>

A bit of clarity in language is also in order, as it is quite clear states will not be directly

providing student-level data to the federal government because of these agreements: The Common Core testing organizations function as middlemen to facilitate this data-sharing. States have promised to give student-level data to the testing organizations, which have in turn promised the federal government open access to student-level data. It’s that simple.

If state superintendents truly believe Common Core tests will not—and should not—give the federal government access to student-specific information, they should not waste time on do-nothing letters but instead champion legislation to ensure student privacy. Secretary Duncan’s March 13<sup>th</sup> response to the superintendents’ letter flatly denied the plain language of the agreements his department signed. According to Duncan, “the [U.S.] Department [of Education] does not require the two consortia developing next-generation assessment systems through Race to the Top Assessment grants to share any student-level information with the Department or any federal agency.”<sup>129</sup>

To assess whether he displays an accurate understanding of these agreements, consider several provisions from these various several-hundred-page documents. The full passage quoted above says “the conditions on the grant award, as well as to this agreement, [are] including, but not limited to working with the Department to develop a strategy to make student-level data that results from the assessment system available on an ongoing basis for research, including for prospective linking, validity, and program improvement studies.”<sup>130</sup> Perhaps Duncan is suggesting that there is a difference between “sharing” data, which he says the consortia won’t do, and making it “available.” If so, that bit of sophistry is unlikely to reassure concerned parents.

Or could Duncan be suggesting that, because this provision does not explicitly say the data shall be made available to USED, it refers to making the data available to someone else? If so, his suggestion is refuted by other provisions in the relevant documents. Another section of the cooperative agreement between USED and the consortia says the latter “must provide timely and complete access to any and all data collected at the State level to ED or its designated program monitors, technical assistance providers, or researcher partners, and to [the Government Accountability Office], and the auditors conducting the audit required by 34 CFR section 80.26.”<sup>131</sup> What data will be collected “at the state level”? Will it include “student-level” data, contrary to Duncan’s letter? It appears so. One hundred pages in, the SBAC application for federal funds says, “The Consortium also will participate in any technical assistance activities conducted or facilitated by USED or its designees and work with the Department to develop a strategy to make student-level data available on an ongoing basis for cross-State or cross-consortia research activities.”<sup>132</sup> Student-level data must be available at the state level for it to be used across state lines (which, as noted earlier, effectively creates national databases, despite Duncan’s acknowledgement that such databases are illegal). Further, a footnote to this selection provides that such “cross-state or cross-consortia research activities” will be “subject to FERPA, state, and local privacy laws.” Local privacy laws (these authors are aware of none) only matter if the data crossing state lines comes from local jurisdictions. And, as the agreement says, this data coming from local jurisdictions is not aggregate data, but individual, “student-level.”

Yet further, the PARCC application for federal funds suggests an answer about who will receive the “student-level” data both it and SBAC have agreed to make “available” for research: “there are some studies that are far too large for the Partnership to handle and manage. Therefore, it will be necessary for the U.S. Department of Education to manage the larger scale longitudinal aspects of some studies. The Partnership will work with the U.S. Department of Education to provide the necessary data to complete these and other studies....”<sup>133</sup>

It is clear from all these provisions that USED will, through the cooperative agreements and other commitments, have access to student-level data from the consortia states. Duncan’s letter to the contrary seems designed to allay legitimate concerns rather than accurately report the situation.

### **What Privacy Protections Exist?**

Considering the breadth of data being collected, and how much of it will ultimately find its way to state and federal governments, it is critical that privacy protections be as close to ironclad as possible. Unfortunately, as the data mountain grows larger, the privacy safeguards have shrunk.

It is beyond the scope of this paper to examine all the state student-privacy statutes that may exist. The focus here is on federal protections.

### **The Central Federal Privacy Law: FERPA**

The most significant federal statute protecting student and family privacy is the Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the Buckley Amendment.<sup>134</sup> Among other things, FERPA prohibits the disclosure of students’ personally identifiable information (PII), by federal, state, or local education entities,

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without written consent of the student or his parents, except in certain circumstances.<sup>135</sup>

FERPA applies to all federally funded schools (including even private colleges and universities whose students receive federal financial assistance).<sup>136</sup> It does not apply to the records kept by private schools that receive no federal funds. Nor does it protect the records of homeschool students. This means that in states that require submission of some homeschool records (such as attendance, report cards, *etc.*) to the state or local public-school authority, those records are not currently protected by FERPA.<sup>137</sup> Congress amended FERPA in 2013 to make it easier for schools to release a child's record to child-welfare agencies without the prior written consent of parents, or in some cases without even informing parents of the release.<sup>138</sup>

In general, PII “includes information that can be used to distinguish or trace an individual's identity either directly or indirectly through linkages with other information.”<sup>139</sup> PII is defined in federal regulations to include the student's name, names of parents or other family members, student or family address, a personal identifier (such as Social Security number, student number, or biometric record), indirect identifiers such as date or place of birth and mother's maiden name, and “other information that, alone or in combination, is linked or linkable to a specific student that would allow a reasonable person in the school community, who does not have personal knowledge of the relevant circumstances, to identify the student with reasonable certainty.”<sup>140</sup> The term “biometric record” (added as an amendment in 2009) includes records such as fingerprints, retina and iris patterns, voiceprints, DNA sequences, facial characteristics, and handwriting.<sup>141</sup>

Although FERPA generally prohibits nonconsensual disclosure of students' PII, the rules are different for so-called “directory information.” Such information includes the student's name, address, telephone number, email address, photograph, date and place of birth, major field of study, grade level, enrollment status (undergraduate or graduate, *etc.*), participation in officially recognized activities and sports, weight and height (for members of athletic teams), dates of attendance, degrees and honors, and most recent educational institution attended.<sup>142</sup> Schools are required to notify parents of the types of information that have been designated “directory” and allow a reasonable period of time for parents to object to release of that information. But if a parent does not “opt out” of disclosure, the school is not required under FERPA to keep the information confidential.<sup>143</sup>

For education records not designated as directory information, the general rule is that disclosure to third parties is prohibited without prior consent. An exception to this prior-consent requirement, however, is the release of PII to “authorized representatives” of certain officials (including the U.S. Secretary of Education and state educational authorities).<sup>144</sup> Under this “authorized representative” exception, nonconsensual disclosure may be made to such entities if the data is “protected in a manner which will not permit the personal identification of students and their parents by other than those officials [*i.e.*, the authorized representatives].”<sup>145</sup> The disclosure must be made “in connection with the audit and evaluation of Federally supported education programs, or in connection with the enforcement of the Federal legal requirements which relate to such programs.”<sup>146</sup>

Parents may not sue a school that discloses their child’s PII in violation of FERPA. Only USED can sanction a school for FERPA violations, and the sanctions are limited to denial of funding if the secretary of education “has determined that compliance cannot be secured by voluntary means.”<sup>147</sup>

### **Regulatory Rewrite**

From FERPA’s enactment until January 2012 (almost 38 years), the settled interpretation of the statute’s language was that only individuals under the direct control of the U.S. education secretary or of state educational authorities could be designated “authorized representatives” for purposes of nonconsensual data-disclosure.<sup>148</sup> That is, no nonconsensual disclosure of PII could be made under this exception except to other employees or contractual agents of the educational agencies involved. (Regulatory changes made in 2009 allowed nonconsensual disclosure to outside contractors as well as employees, but the “direct control” requirement was retained.)<sup>149</sup> But as of January 3, 2012, USED promulgated new regulations that radically altered this longstanding interpretation.

Under the new regulations, an “authorized representative” designated to receive students’ PII, without consent, can be literally anyone—another government agency (such as the departments of Labor or Health and Human Services), a foundation or other private nonprofit organization, a research group, an individual, or a for-profit company.<sup>150</sup> As long as the data was released in connection with an audit or evaluation of a federal or state-sponsored “education program,” parental consent would not be required before the release.<sup>151</sup> Of this, the American Civil Liberties Union (ACLU) says, “Officials will

no longer have to describe their actual legal authority to conduct an audit. Instead they will simply be able to describe something as an evaluation, audit or compliance activity and gain access to significant amounts of the personal data stored in student records.”<sup>152</sup> Moreover, the new regulations expanded the definition of “education program” to include any program that provides education or training of almost any type, even programs administered by an organization or entity other than an education authority.<sup>153</sup> For example, a covered “education program” could be one administered by a juvenile correctional facility, or a hospital, or a college-entrance-test tutoring service.<sup>154</sup>

These regulatory changes mean that USED or a state department of education, for example, could designate a commercial education-products vendor to “evaluate” a particular digital-learning program in a school, and release students’ PII to that company, all without parental consent or even parents’ knowledge. Or, a state might send PII to the state public-health department to compare student health records as part of an evaluation of a drug-abuse-prevention program—even one not administered by a school. The rule change “is so unbounded that it could extend to websites that promise to ‘teach you how to make money online from home,’” according to the ACLU.<sup>155</sup> The possibilities are limited only by the imagination.

The new regulations also expand permissible data-sharing in connection with research-studies. FERPA allows educational agencies and institutions (*i.e.*, K-12 schools, colleges, and universities) to disclose student PII, without parental consent, to organizations conducting studies “for, or on behalf of” those agencies and institutions for certain

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purposes (developing and validating tests, administering student-aid programs, and “improving instruction”).<sup>156</sup> Under the new regulations, a State Educational Authority (SEA) would be allowed to take the PII it received from the schools and colleges for other purposes, and re-disclose it to research organizations.<sup>157</sup> If the school or college objects to redisclosure of the PII, the SEA may (under the new regulations) claim implied authority to do with the PII what it wants as long as it claims a research basis for the disclosure.<sup>158</sup> “This provision would, for the first time, make the research-studies provision in FERPA applicable to state-level data [on the grounds that] state educational agencies and state higher education agencies typically have either express or implied authority to perform and support research and evaluation of publicly funded programs for the benefit of multiple educational agencies and institutions in their state.”<sup>159</sup>

A recent story from Washington State provides an example of how the relaxation of third-party access to student data might work in practice. In December 2013 it was revealed that the Washington Department of Public Instruction signed agreements to share personal student data with media organizations including *The Seattle Times* and The Associated Press. This data included “individual student and staff data dating from 2009 to this year, including individual students’ test scores on numerous state assessments, grades, school schedules, absences and discipline information.”<sup>160</sup> To the inevitable outcry from parents and other Washington citizens, a spokesman for the Office of the Superintendent of Public Instruction (OSPI) defended the decision by noting that OSPI considered the *Times* a research organization and therefore eligible to

receive personal information under FERPA.<sup>161</sup> OSPI also insisted that the data would be de-identified; a critique of the effectiveness of de-identification appears later in this paper.

Dismissing criticism of its decision to expand third-party access to students’ PII, USED cites the requirement that those third parties enter into written agreements promising to maintain the confidentiality of the data, and to destroy or return it within a specified time.<sup>162</sup> But this requirement offers little guarantee of confidentiality. For one thing, removing the requirement that data-sharing be limited to authorized representatives under the sharer’s direct control in fact removes the most effective means of ensuring data-security. As the American Association of Collegiate Registrars and Admissions Officers (AACRAO) explained:

[Written] agreements will be virtually useless in stopping an authorized representative who is not under the direct control of the State or local agency from misusing the data for other purposes or redisclosing the data to others. . . . [T]he written agreements may be required to spell out how nonconsensually redisclosed data should be used and released, but without the element of direct control, the State or local educational agencies will have no ability to enforce them. A chief state school officer could call over to her colleague heading the State labor or health department and beg the colleague to crack down on a rogue authorized representative working under the colleague’s direct control, but there would be no regulatory assurance that the improper activity would stop, or could be stopped. Similarly, a researcher conducting an independent

higher education evaluation could not easily be stopped from using student records for purposes other than those envisioned when she was made an authorized representative for a legitimate evaluation.<sup>163</sup>

Another problem is that the penalties for violating a written confidentiality agreement are, in most cases, minimal. Although USED notes that such agreements could include sanctions allowed under state law (such as liquidated damages),<sup>164</sup> the only federal penalty is a five-year ban on the discloser's access to student data.<sup>165</sup> The unlikelihood of getting caught with an improper disclosure, coupled with the absence of serious penalties, further contributes to the "data free-for-all" environment.

When these regulatory revisions were proposed and opened for public comment, admonitory comments flooded in from stakeholders familiar with FERPA and concerned for student privacy. AACRAO warned:

[T]he proposed changes represent a wholesale repudiation of fair information practices. Well-settled principles of notice, consent, access, participation, data minimization, and data retention are all undermined by the new paradigm promoted by this proposal. . . . [T]he proposed regulations have been overwhelmingly influenced by the single-issue lobbying of a well-financed campaign to promote a data free-for-all in the name of education reform. [T]he Department has . . . chosen to facilitate an unconditional surrender of educational privacy rights of American families and students.<sup>166</sup>

These and thousands of similar comments went unheeded—the final regulations were virtually unchanged.<sup>167</sup>

### **Who Needs Congress?**

These regulatory changes represent more than just a revised interpretation of certain statutory provisions; they rewrite the statute itself. As many commentators on the regulations protested, USED's legal authority to accomplish these changes without congressional action is doubtful at best. Paul Gammill, former head of USED's Family Policy Compliance Office, expressed this objection:

Sections (b)(1)(C), (b)(3) and (b)(5) of FERPA . . . clearly identify and permit only four entities to disclose PII without consent. These four were established by statute and have been unchanged for many years; thus, they need to be expanded by statute alone. While the [Notice of Proposed Rule-Making] explains the desire to greatly expand the list of such "authorized representatives," such a clearly defined and established statute cannot be expanded by a regulatory change. Such an expansive regulatory change to established statutory law exceeds the legal authority of the Department.<sup>168</sup>

In its final regulations, USED responded to comments such as these by claiming to have derived the necessary legal authority from the stimulus bill (ARRA). According to USED, "ARRA provides clear evidence of Congressional intent to support the expansion of SLDS, and is not merely an appropriations bill . . ." <sup>169</sup> USED argued, essentially, that if ARRA wants expanded SLDS, and if FERPA stands in the way of the kinds of expansion

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USED deems appropriate, then FERPA must be changed.<sup>170</sup>

When the new regulations took effect, a suit was filed in the U.S. District Court for the District of Columbia by the Electronic Privacy Information Center (EPIC). EPIC and its co-plaintiffs sought an injunction preventing USED from enforcing its new FERPA regulations on the grounds that USED exceeded its statutory authority in altering the statute as it did.<sup>171</sup> In September 2013 the court dismissed the suit on a technicality, holding that the plaintiffs did not have standing to sue; the court never addressed EPIC's substantive claims.<sup>172</sup>

### **Protection of Pupil Rights (Hatch Amendment)**

Another federal statute implicated in educational data-collection is the Protection of Pupil Rights Amendment of 1978 (PPRA), sometimes referred to as the "Hatch Amendment."<sup>173</sup> Whereas FERPA addresses under what circumstances students' PII may be disclosed, PPRA focuses on what information may be collected in the first place. But the two statutes overlap in certain respects.

Among other things, PPRA requires written parental consent before a minor student can be required to participate in any survey, analysis, or evaluation funded by USED that would reveal information about certain sensitive topics: a student's or parent's political affiliations or beliefs; a student's or his family's mental or psychological problems; sexual behavior or attitudes; illegal, antisocial, self-incriminating, and demeaning behavior; critical appraisals of other individuals with whom respondents have close family relationships; privileged

relationships (such as with lawyers, physicians, or clergy); a student's or parent's religious practices, affiliations, or beliefs; or income.<sup>174</sup> Parents might wonder why schools would or should ever be allowed to require students to participate in studies addressing these topics that have little to do with education. But PPRA at least somewhat limits this activity (although the rise in anti-bullying laws that compel schools to enter student misbehavior into state databases, sometimes into perpetuity,<sup>175</sup> also threatens such limits).

Although the statute is unclear on this point, the National Center for Education Statistics, in its technical brief on the subject, takes the position that the parental-consent requirement applies only to studies that are funded by USED.<sup>176</sup> For all other surveys, such as those that might be administered by the school on behalf of another organization, "school districts are required to provide an annual schedule of the specific or approximate dates of [such other surveys] with a notification of the parents' right to request and review a copy of the survey before it is administered and to decide that their child will not participate."<sup>177</sup>

PPRA also requires notifying parents of their right to decide whether their child will participate in any non-emergency invasive physical examination or screening that is scheduled in advance and administered by the school as a required condition of attendance but is not necessary to protect the immediate health and safety of students (such as drug-testing).<sup>178</sup> This language was added with the enactment of the federal No Child Left Behind Act in 2001. Because the provision potentially conflicts with other federal and state statutes, such as the Health Insurance Portability and Accountability Act

(HIPAA), and because it is more limited in scope than the original proposed language was (applying, for example, only to certain physical exams and screenings rather than to mental-health testing and treatment), the interpretation and operation of this relatively recent language are uncertain.<sup>179</sup>

From the standpoint of protecting students' PII from disclosure to third parties, PPRA's provisions relating to the use of student data for commercial purposes merit special examination. Pursuant to amendments contained in the No Child Left Behind statute of 2001, PPRA requires that parents be notified annually of their right to decide whether their child's personal information may be made available for marketing or for sale.<sup>180</sup> They must also be notified of the specific or approximate dates during the school year when such activities will be scheduled.<sup>181</sup> Because this provision expressly does not supersede FERPA<sup>182</sup> (which allows parents to opt out of disclosure of students' directory information), it is unclear how PPRA provides more privacy protection than FERPA does (or at least did, before the new regulations changed the scope of the statute).<sup>183</sup>

Moreover, PPRA's opt-out requirement "does not apply to the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions . . . ." <sup>184</sup> Examples of such commercial activities for which the school may disclose PII with no parental opt-out include college or military recruitment; book clubs and similar programs; curriculum and instructional materials; "[t]ests and assessments . . . to provide cognitive, evaluative, diagnostic, clinical,

aptitude, or achievement information about students (or to generate other statistically useful data for the purpose of securing such tests and assessments) and the subsequent analysis and public release of the aggregate data from such tests and assessments"; school fundraising programs; and student-recognition programs.<sup>185</sup> The statute makes it clear that this is not an exclusive list of exceptions to the notification requirement.

As will be seen below, these broad exceptions to PPRA protections diminish parents' right to keep their children's personal information from being used by corporations or others for commercial purposes.

### **Student Health Records**

Since schools often maintain records concerning students' physical health, psychological screenings, *etc.*, the question arises whether those records are protected by HIPAA.<sup>186</sup> For two reasons, the answer is generally no. First, even if a school employs nurses or other health-care providers, it probably would not be a HIPAA-covered entity because the providers do not engage in covered transactions such as billing a health plan for their services.<sup>187</sup> Second, student health records are generally considered "education records" expressly exempted from HIPAA.<sup>188</sup> Thus, even these sensitive records are protected only by the shriveled provisions of FERPA.

As a consequence, stringent limitations on transmission of sensitive patient records that must be observed by a doctor or a hospital do not pertain to transmission of the very same, highly sensitive material if it is collected by a school.

### **The False Promise of Data Anonymity**

In a bow toward protection of student data, the America COMPETES Act includes among its required elements of SLDS that the state assign each student a unique identifier “that does not permit a student to be individually identified . . . .”<sup>189</sup> Thus, in theory, data-using stakeholders can benefit from access to the data they need without breaching the privacy of individual students and families. Proponents of increased data-use routinely assure parents that there is nothing to worry about, because of de-identification. How effective is this safeguard? In the era of “Big Data,” not very.

The problem is data-matching. When there are multiple, perhaps hundreds, of items in the database, the absence of a name or Social Security number becomes a mere inconvenience, not an obstacle, to re-identifying the “anonymized” subject. And as discussed earlier, the National Education Data Model recommends collecting more than 400 attributes and other data points on each student.

EPIC explains how re-identification works:

[D]ata [can be] re-identified by combining two datasets with different types of information about an individual. One of the datasets contain[s] anonymized information; the other contain[s] outside information . . . collected on a daily or routine basis . . . and which includes identifying information (e.g., name). The two datasets will usually have at least one type of information that is the same (e.g., birthdate), which links the anonymized information to an individual. By combining information from each of these datasets, researchers can uniquely identify individuals in the population.<sup>190</sup>

Examples abound of the ease with which data-matching facilitates re-identification. One famous case was the Netflix study in 2006. Netflix released anonymized data (with usernames replaced by unique identifiers) of movie ratings submitted by 500,000 of its customers over a six-year period.<sup>191</sup> Researchers from Stanford University compared these anonymized ratings, along with the timestamps showing when they were submitted, to non-anonymized ratings posted on an Internet movie website. The result: Supposedly anonymous reviewers were identified with almost 100 percent accuracy.<sup>192</sup> Another well-known study, from Massachusetts, showed that “zip code, birth date, and sex could be combined to uniquely identify 87 percent of the United States population.”<sup>193</sup>

This type of re-identification has been employed in the context of K-12 education. In 1999, Laurens Wise compared testing data from Kentucky students who took the National Assessment of Educational Progress (NAEP), to similar data from the Kentucky statewide assessment called the Kentucky Instructional Results Information System (KIRIS). The study aimed to determine if Kentucky’s improved reading scores on NAEP’s fourth-grade test in 1998 resulted from the exclusion of particular students who were less likely to score well. Although data on all 2,741 Kentucky students whom NAEP wanted to test had been de-identified, Wise reported that he was able to match the students’ NAEP files to their KIRIS results with 86 percent accuracy based on the comparison of just seven demographic variables: presence or absence of an Individualized Education Program (IEP), presence and type of disability, school attended, indication of limited English proficiency, gender, race,

and age (in months).<sup>194</sup> “For a total of 2,358 cases,” the Wise study noted, “there was an exact match on all of the above variables.”<sup>195</sup>

Several scholars have written extensively on the problems of truly protecting privacy in the age of Big Data. The dilemma is that “[u]tility and privacy are, at bottom, two goals at war with one another. . . . No matter what the data administrator does to anonymize the data, an adversary with the right outside information can use the data’s residual utility to reveal other information. Thus, at least for useful databases, perfect anonymization is impossible.”<sup>196</sup> The more data there is, and the more extensively it is used, the less likely it can be effectively anonymized.<sup>197</sup> And, as discussed earlier, USED fully intends that the data schools collect will be massive—and extraordinarily useful. The only answer is to prohibit collecting the data in the first place.

### **Is Opt-Out an Option?**

As discussed above, FERPA gives parents some control over what PII on their children may be shared. With respect to “directory information” (such as name, address, date of birth, telephone number, email address, and photo), schools are required to issue the following annual notifications to parents or guardians: 1) a description of the school’s directory policy (*e.g.*, what information the school has deemed “directory”); and 2) parents’ right to opt out of the release of that information to third parties.<sup>198</sup> Parents also have the right to inspect and review their children’s records and ask to correct errors.<sup>199</sup>

The “opt out” option, however, is of limited value. For one thing, schools do not always comply with the notification requirement, or if they do, the notice gets buried in a

mountain of information sent home from school at the beginning of the school year. Because parents may not realize the threat of identity theft from school records or the deficiencies of federal and state student-privacy laws, they may be insufficiently vigilant about protecting their rights. For another, as has been discussed, parents are not given the option to opt out of sharing their children’s data with other education agencies (such as USED) or their now almost unlimited “authorized representatives.” Thus, under current law, parents have no right to absolutely prohibit their children’s information being sent beyond the school, the district, or the state.

Another possibility is to opt out of the standardized tests that facilitate data-collection. In late 2013 and early 2014, a national parents’ movement has grown to withdraw students from the testing, both to reduce the disruption and anxiety of testing and to prevent test-related data-collection.<sup>200</sup> Students who do not take the Common Core-aligned PARCC or SBAC assessments will not be supplying data to those consortia for transmittal to USED.

Is testing opt-out a valid option? There is little federal or state statutory authority that expressly permits or prohibits opting out of testing—apparently because the lawmakers never contemplated that parents would rebel. Consequences could ensue, however, in the area of federal funding. Under No Child Left Behind, a school’s Adequate Yearly Progress (AYP) is determined by student performance on tests and the school must demonstrate 95 percent participation among all subgroups of students.<sup>201</sup> Falling below that threshold could result in failure to make AYP, and therefore redirection of certain federal

funding.<sup>202</sup> In addition, since RttT and the administration's conditional NCLB waiver program dictate that teachers' evaluations be based partly on student test scores,<sup>203</sup> opting out by certain students could have ramifications for teachers as well. At present, the uncertainties surrounding testing opt-outs are substantial, but frustration about ever-increasing assessments and ever-increasing data demands is driving many parents to consider this course of action, especially in absence of their elected representatives providing legal relief.

There is a deeper philosophical problem with the concept of opt-out. As the Citizens' Council for Health Freedom notes, "Opt-out assumes government has first dibs on the data, places a significant bureaucratic burden on individuals, and creates a government record of dissent."<sup>204</sup> In essence, opt-out reinforces the supremacy of the government over the individual. Perhaps motivated by this philosophy, some parents have decided not to provide the information in the first place. Parents who wonder why a school needs their child's dental records to teach him arithmetic are beginning to say no, that information is private. Most school systems have yet to be confronted with widespread refusal to comply, but as the data issue balloons, that will almost certainly change.

### **Escape Through Private Schools or Homeschooling**

Can parents protect their children's data by leaving the public schools for private schools, or by homeschooling? Most states do require submission of some types of data concerning these students, although the requirements are usually fairly limited—for example, attendance, course-completion, and immunization records. A few states, however,

require more, such as special-education status and more details on educational progress.<sup>205</sup> Parents would be wise to review their state's laws before assuming that their privately schooled or homeschool children will be unaffected by data requirements.

One avenue through which government (state and federal) could access PII of non-public-school students is state assessments. For example, New York requires all private-school students to participate in some of its assessments, and South Carolina requires the same for homeschool students.<sup>206</sup> Approximately half of states require homeschool families to administer tests.<sup>207</sup> Nearly all states offer accreditation to private schools, which most such schools pursue so their graduates can enroll in colleges with fewer questions about credentials.<sup>208</sup> Accreditation often means administering state assessments, with all its data-collection ramifications.

Most states have committed to replace at least some of their tests with the national assessments aligned with Common Core. When the PARCC or SBAC assessments go into effect, the private-school and homeschool students who are required to participate in state assessments will have their personal data made available to the federal government through the cooperative agreements that PARCC and Smarter Balanced have signed with USED.<sup>209</sup>

School voucher programs may offer another avenue for herding private-school students into the government data-collection scheme. States with school voucher programs that allow public funding for students to attend private schools (such as Indiana and Wisconsin) may require voucher-recipient schools to administer the state assessments.<sup>210</sup>

And in Indiana, for one, it is not only the actual voucher students who will have to take the state assessments, but all students in the voucher-recipient schools.<sup>211</sup> Thus, the personal data from all these students will make its way into the state databases the consortia are required to share with the federal government.

Currently, homeschool-student data is less likely to be included in state (and probably federal) databases than is private-school data, primarily because homeschools are usually not subject to accreditation requirements.<sup>212</sup> However, the Homeschool Legal Defense Association warns that the New York City school district uploaded homeschool-student data into the inBloom database (discussed below).<sup>213</sup> In a presentation to a CCSSO conference on testing, Oklahoma's P-20 Data Coordinating Council recommended expanding data-collection to students currently outside state systems, such as homeschoolers.<sup>214</sup> Nearly every state has a P-20 council like Oklahoma's.

Another possible vehicle for capturing homeschool-student data is virtual schools. Some homeschool parents access virtual charter schools that are run through the public-education system. The connection with public schools could provide the argument that these homeschool students must be included in the data pool.

One issue that has arisen for which there is no definitive answer is what happens when a student leaves public school for either private school or homeschooling. Will his data be turned over to his parents? Some parents have been denied their children's files in these circumstances. Even if the parents were given the files, will the data then be deleted from the public-school system? With no state or federal legislation mandating

this, it is likely that the student's personally identifiable information will remain in the public database.<sup>215</sup>

Given the philosophy governing the federal government's direction in education—more data-collection, more data-sharing, and more tracking of citizens for workforce purposes—there is reason to be concerned that government will ultimately engulf even private-school and homeschool students in its data web.

### **Alternate Common Core Tests**

A handful of states have decided to keep Common Core's curriculum mandates but jettison the PARCC and SBAC tests. At this writing, these states include Alabama, Florida, Georgia, Indiana, Kansas, Pennsylvania, South Carolina, and Utah. A few other states, such as Massachusetts, are on the fence about whether to use the tests. Alabama has chosen to use tests from ACT to measure Common Core instead, and ACT has developed an entire suite of tests to essentially do the same things as PARCC and SBAC—measure students in grades 3-8 and once in high school for reading and math. This line of tests is called ACT Aspire.

The Aspire tests may seem like a way out of feeding private student data to the federal government through PARCC and SBAC, but they include other dangers. For one, ACT Aspire will measure more than just the Common Core standards. The tests will also measure “career-readiness measures” and “non-cognitive attributes”<sup>216</sup> such as “teamwork” and “motivation.”<sup>217</sup> Such tests will “provide a running movie of students, rather than a single snapshot in time,” ACT education division President Jon Erickson told *The Chronicle of Higher Education*.<sup>218</sup> ACT also plans to expand the tests into earlier

grades, and begin measuring a child’s “career readiness” at least as early as kindergarten.<sup>219</sup>

A private organization such as ACT does not by itself have the coercive power of government, and entities that contract with it may modify those contracts to include student-privacy safeguards or to remove test questions that examine non-academic attributes such as student behavior. When a state such as Alabama requires a private company’s suite of tests for students enrolled in public schools, however, it puts the force of government behind a set of assessments about which many parents may not be comfortable. Unless contractually prohibited by the state department of education (and state departments of education rarely object to assessment of non-academic attributes), an organization such as ACT will be able to demand private information in exchange for public education. This could occur, as in Alabama, without lawmakers’ having decided whether it is appropriate to collect data about student behaviors through tests they intended to measure academics.

## **Current Initiatives That Threaten Student Privacy**

### **Workforce Data Quality Initiative**

One of the more explicit expressions of the federal government’s determination to track citizens throughout their lives is found in the Workforce Data Quality Initiative (WDQI), a “collaborative partnership at the Federal level between the Departments of Labor (DOL) and Education” which has awarded grants to states to expand their longitudinal data systems.<sup>220</sup> The grantee states, in turn, are expected to “demonstrate similarly established partnerships between state educational and workforce agencies.”<sup>221</sup>

DOL explains that through WDQI, states will develop systems to compile all their workforce data, from sources such as Unemployment Insurance (UI) records, UI benefit claims, and training and employment services. The states will then match it against education data “to ultimately create longitudinal data systems with *individual-level information beginning with pre-kindergarten through post-secondary schooling all the way through entry and sustained participation in the workforce and employment services system*” (emphasis added).<sup>222</sup> The goal, as expressed by the Joyce Foundation’s Shifting Gears initiative, is to “see how well students in education programs are securing career-path jobs in fields of importance to local economies.”<sup>223</sup> This goal reflects a perhaps unfounded confidence in government’s ability to predict the development of local economies.

The Progressive vision is alive and well with WDQI, which advances the goal of using education and workforce data to begin citizen tracking “in the home with the very young and continu[ing] through school, postsecondary education and the workplace.”<sup>224</sup> This is not “aggregate” data; it is “individual-level information.” And it is designed to follow each citizen throughout his or her career.

More evidence of this individual tracking comes from the CCSSO-developed “State Core Model: A Common Technical Reference Model for States Implementing P20 State Longitudinal Data Systems.” The model describes the goal of tracking students throughout their careers:

Workforce administrative data can be linked because these programs (such as UI programs) collect participants’ Social Security number. Additionally,

for students leaving school, workforce administrative data can be used to track the employment of former students, as well as their subsequent earnings and industry. Similarly, these data will show whether former students are unemployed, when they became unemployed, if they collect unemployment insurance benefits, the types of employment services received from state workforce agencies, and whether they receive training or related services.<sup>225</sup>

Current procedure under WDQI is to have this data-tracking accomplished within the states so education programs can be tied to specific employment outcomes for students. However, since states are now required to build practically identical longitudinal data systems according to the America COMPETES elements, multi-state sharing becomes not only possible, but likely. Texas, for example, is considering “[p]otential multi-state collaboration for additional WDQI research with common data elements and methodologies [and] separate state-specific analyses.”<sup>226</sup> And of course, we do not yet know exactly what “student-level” data will be sent to the two federally funded Common Core testing consortia for further sharing with USED. WDQI is thus another troubling element in fulfilling the Progressive goal of national tracking of U.S. citizens.

### **inBloom’s Comprehensive Data-Gathering – “Ahead of Its Time”?**

One of the Gates Foundation’s more ambitious contributions to efforts to collect and share data is inBloom (formerly known as the Shared Learning Collaborative). Although launched amid great fanfare in 2011, by 2014 inBloom was wilting under a sustained assault from concerned parents and

data-privacy experts. In April 2014, inBloom CEO Iwan Streichenberger finally announced his intention to “wind down the organization over the coming months.”<sup>227</sup> At this writing, it is unclear whether inBloom will really die or will be resurrected under another guise. But the widespread enthusiasm among technocrats for its capabilities suggests the concept is likely to endure, even if this particular iteration fails. InBloom’s illustration of both the expansive data-use mentality, and of the alliance of corporate and non-profit entities to “transform” education, makes it worthy of attention.

A nonprofit organization funded by \$100 million from Gates and the Carnegie Corporation, inBloom is “an alliance of states, districts, educators, foundations, and content and tool providers” that was creating a set of shared technology services to foster “personalized learning.”<sup>229</sup> Another key participant in the initiative was Wireless Generation (owned by Rupert Murdoch’s News Corp., and run by former New York City Education Commissioner Joel Klein), which was to build part of the inBloom software infrastructure.<sup>230</sup>

InBloom was “inspired by the vision of the Council of Chief State School Officers” (one of the developers and owners of Common Core) and, at least until recently, expressly intended to develop technology “to support the implementation of the Common Core State Standards.”<sup>231</sup>

InBloom sought to address the problem of data integration. Much student data cannot be optimally used (from the data enthusiasts’ point of view) because it is located in multiple disconnected systems. The goal was to “build the technology ‘plumbing’ to connect the different tools and systems in use

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in schools today and enable those products to work better together.”<sup>232</sup> When integration is achieved, teachers and parents should be able to more easily access student data, stored in a “cloud,” to get a “more complete picture of student learning.”<sup>233</sup>

The inBloom cloud was to include name; address; demographic information; test scores; records on attendance, learning disabilities, disciplinary actions, and health; and perhaps even hobbies, career goals, and attitudes toward school.<sup>234</sup>

In a May 2013 testimony before the Colorado State Board of Education, EPIC warned about specific data collected in inBloom’s various student domains. The “student cohort” domain, according to inBloom, “represents a wide variety of collections of students,” which may include “students that (*sic*) are tagged for interventions or . . . for the purposes of tracking or analysis, such as a principal watch list.”<sup>235</sup> The “discipline” domain includes “actions or behaviors that constitute an ‘offense’ in violation of laws, rules, policies, or norms of behavior.”<sup>236</sup> As EPIC noted, “[w]hile violating laws, rules, or school policies is a clear disciplinary infraction, violating ‘norms of behavior’ is a seemingly arbitrary standard to be included on an education record, subject to the review of a potential employer.”<sup>237</sup>

Troubling though the breadth of this data-collection is, even more disturbing were inBloom’s goals beyond streamlining processes for teachers and parents. In pursuit of “personalized learning” for students, inBloom aimed to facilitate the access of education-technology vendors to the data so they could create digital products for individual students:

In addition to making instructional data more manageable and useful, this open-license technology . . . will also support a large market for vendors of learning materials and application developers to deliver content and tools that meet the Common Core State Standards and are interoperable with each other and the most popular student information systems.<sup>238</sup>

In the wake of widespread opposition among parents, inBloom emphasized that the organization itself would not be providing student data from the cloud to vendors; instead, it insisted, the decision whether to grant vendors access to the data would rest with school districts or the state department of education.<sup>239</sup> But inBloom’s structure would have made this sharing possible and (if the technology worked as planned) easy, and education-technology companies were (and presumably still are) enthusiastic about the prospects of accessing personal student data to create customized learning products. As Jeffrey Olen of a software company called Compass Learning said, “This is going to be a huge win for us.”<sup>240</sup>

Although inBloom’s Privacy and Security Policy listed various administrative, physical, and technical safeguards against data breach, it admitted that it “cannot guarantee the security of the information stored in inBloom or that the information will not be intercepted when it is being transmitted.”<sup>241</sup> InBloom also emphasized that “[a]ll Personally Identifiable Information [PII] uploaded to, and made accessible from, inBloom will be handled, processed, stored, transmitted and protected in accordance with all applicable federal data privacy and security laws (including FERPA). . . .”<sup>242</sup> But as discussed earlier, this assurance rings hollow after the recent regulatory gutting of FERPA.

Nor would the Protection of Pupil Rights Act<sup>243</sup> appear to prohibit inBloom data-sharing. Although PPRA establishes parental-notice and opt-out rights under certain circumstances, including “the collection, disclosure, or use of personal information collected from students for the purpose of marketing or for selling that information,” it also includes this exception to those requirements:

Paragraph (1)(E) does not apply to the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions, such as the following: . . . (iii) Curriculum and instructional materials used by elementary and secondary schools. . . .<sup>244</sup>

Because the purpose of sharing the data with commercial companies would be to develop “personalized” learning products, the sharing without parental consent would arguably comply with PPRA. Thus, there appears to be no federal obstacle either to a state’s sharing data with inBloom, or to inBloom’s sharing its data with whatever companies sought to access it (if the school district authorized the sharing). All of this could happen without parental consent or even parental knowledge.<sup>245</sup>

### **States Retreat, But Cloud Computing Marches On**

By 2014, most of the nine states originally in the inBloom pilot program had withdrawn altogether or at least backpedaled in the face of parental outrage.<sup>246</sup> For some months the exact status of the inBloom membership was unclear; some commentators suggested that the firm participants had dwindled to just a

few local districts (with Massachusetts on the fence).<sup>247</sup>

Perhaps the most noteworthy defection was New York, which had been especially ambitious in pursuing all the data-sharing avenues inBloom made possible. Personally identifiable data on New York students—including demographic information, parent contact information, student enrollment, program participation, attendance records, disciplinary records, course outcomes, and test scores—had been transferred to inBloom for cloud storage, with plans to transfer even more.<sup>248</sup> In October 2013, *The New York Times* reported that personal information covering about 90 percent of the 2.7 million public-school (including charter) students had been uploaded into inBloom.<sup>249</sup> Although the initial upload excluded student names, *The Times* reported that “state education officials plan to upload a complete set soon, including names.”<sup>250</sup>

Using RttT funds, the New York State Education Department (NYSED) contracted with three companies (ConnectEDU, eScholar, and NCS Pearson/Schoolnet) to develop and provide dashboards for individual school districts to access this data.<sup>251</sup> Third parties (such as vendors) could access this data if authorized by the state or the school district.<sup>252</sup>

But New York’s pell-mell rush into inBloom ended abruptly in early 2014, when the NYSED directed inBloom to delete all data stored on New York students.<sup>253</sup> In light of fierce parental resistance to the data-collection, and resulting legislative action disapproving the inBloom relationship, a spokesman for the department announced that no additional New York data would be uploaded.<sup>254</sup>

New York's withdrawal was widely viewed as the straw that would break inBloom's back.<sup>255</sup> Nevertheless, proponents of inBloom-type data-collection and -sharing are unlikely to give up. As quoted in *Education Week*, the executive director of the State Educational Technology Directors Association signaled continuing efforts to accomplish what inBloom was attempting: "While perhaps ahead of its time, the inBloom vision – and the tools inBloom built to realize it – remain critically important for the K-12 sector to build upon in the future. I certainly hope that others will step up to fill the void that inBloom will be leaving it its wake."<sup>256</sup>

Despite pushing back successfully against inBloom, most parents don't realize that inBloom is essentially a cloud computing service, and thousands of school systems are using other cloud computing service providers for various data-management and data-analytics tasks. A recent report by the Center on Law and Information Policy at Fordham University's School of Law related numerous concerns about the protection of student data that is turned over to such providers. The report found that "[c]loud services are poorly understood [by parents], non-transparent, and weakly governed"; that school districts "frequently surrender control of student information when using cloud services"; that [a]n overwhelming majority of cloud service contracts do not address parental notice, consent, or access to student information"; and that the governing contracts "generally do not provide for data security and even allow vendors to retain student information in perpetuity with alarming frequency."<sup>257</sup>

As this report shows, the privacy problems with cloud computing services run much deeper than just inBloom. For example, a

recent review of the privacy policies of three major edtech companies—Pearson, Khan Academy, and Edmodo—found much to be desired. Khan Academy's policy allows "almost limitless" sharing of student data with third parties, privacy lawyer Khaliah Barnes told *Education Week*.<sup>258</sup> All cloud computing services can collect the location of children using their sites through IP addresses, and it was questionable whether Edmodo secures that information, she and another security expert said. As for Pearson, which received the best rating: "Every adult American has likely had his or her financial information stolen in the last three years from banks, credit card companies, and retailers that have spent millions of dollars on data security," reviewer Joel Reidenberg told the publication. "Does Pearson really think it's doing a better job than the entire financial-services industry?"

### **Using Student Data to Benefit Private Companies**

Many private education vendors are seeking, and gaining, access to personal student information as a means of bolstering their bottom lines. A common tactic is to offer schools "free" services such as email, word processing, document-sharing, and messaging. In times of tight budgets, such largesse can be quite appealing. But since these corporate providers are not charitable organizations, they are paid in other, less obvious ways.

One benefit to these "freemium" providers is that students gain familiarity with their products and are more likely to continue to use them in the future. But perhaps the greater value to the providers is access to student information for data-mining purposes. For example, providers such

as Google, Microsoft, and Yahoo employ sophisticated algorithms to comb all data collected on individual users—emails, web searches, web sites visited (through cookies placed on the sites)—and use the results to target advertising to those users.<sup>259</sup> In essence, this data-mining allows Google and similar providers to predict future behavior based on past behavior and to sell highly lucrative targeted advertising based on those predictions.

Viewed in this light, the “free” products offered to schools become more problematic. Although Microsoft has insisted for some time that it does not mine education data for advertising purposes, Google made no such pledge until April 30, 2014, after its policies came under scrutiny in a federal lawsuit.<sup>260</sup> Until then, Google said it would not do so “without schools’ permission” – not parents’ permission. Moreover, according to SafeGov.org, Google Apps for Education “was designed from the ground up to include highly sophisticated user profiling and data mining capabilities,” and its standard contract with schools offers them the option of serving ads to students. Again from SafeGov.org: “It is hard to see why Google would explicitly write the ad-serving option into its standard contract with schools if it did not hope one day to make ads for students a default and perhaps even mandatory feature of Apps for Education.”<sup>261</sup>

Until Google’s April 2014 decision to cease scanning student emails, the algorithms that mined the data were still running even when a school using Google Apps for Education declined the ad-serving option. Google lawyers admitted as much in a pretrial affidavit they submitted in a federal class-action suit that challenges the company’s nonconsensual data-mining practices.<sup>262</sup>

Although Google argued that schools have a contractual obligation to obtain their students’ consent to the scanning, the reality is that most parents have no idea what is being done with the data on their children that is collected through these education apps. All they hear are glowing announcements from school that a generous corporate donor is contributing to public education by providing free services.

So as with inBloom, parents won a small victory when Google abandoned at least some of its data-mining plans. But will all the student data Google had collected about unsuspecting students still be available to the company? Parents should also consider the possible non-advertising ramifications of data collected on education apps. For example, if a student uses Google Docs to write an essay about, for example, the futility of gun-control laws, will that information be preserved in Google’s database forever? Could it be disclosed at some point to other parties who might have an interest in this individual’s political opinions? All of these issues illuminate the threats to student privacy that may come from the private sector as well as the public.

### **Unified Data Standards**

Common Education Data Standards (CEDS) is a federally funded “national collaborative effort among states to develop common data for a key set of data elements.”<sup>263</sup> The idea is to develop a common “data vocabulary” among agencies and states so student data can be more easily shared. “The CEDS initiative is comprised of the Council of Chief State School Officers (CCSSO), the State Higher Education Executive Officers (SHEEO), the United States Department of Education (USED), the Bill & Melinda Gates Foundation (Gates), the Data Quality

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Campaign (DQC), the Michael and Susan Dell Foundation (MSDF), the Postsecondary Electronic Standards Council (PESC) and the Schools Interoperability Framework (SIF).<sup>264</sup> CEDS is a perfect example of the type of public-private venture that operates to facilitate certain agendas, to the exclusion of citizens.

Although CEDS itself does not collect student data, it facilitates sharing among agencies that do, and many states are aligning their data systems to CEDS. The latest version of its data vocabulary includes 1,147 elements.<sup>265</sup>

CEDS also contributes to the success of another federally funded initiative, Digital Passport, which is designed to promote sharing of individual student data when students move from one state to another.<sup>266</sup> Within Digital Passport in 2012, Georgia initiated the Southeast Education Data Exchange (SEED), listed members of which are Alabama, Colorado, Florida, Kentucky, North Carolina, Oklahoma, and South Carolina.<sup>267</sup> Although SEED states are not allowed to share outside data within the state, they will have access to “dozens” of data points maintained by the student’s previous home state,<sup>268</sup> such as former street address, last four digits of Social Security number, and birth city.<sup>269</sup> All data within SEED will comply with the CEDS “vocabulary.”<sup>270</sup>

Connected to CEDS, CCSSO also maintains the Education Information Advisory Consortium (EIMAC), which it describes as a “network of state education agency officials tasked with data collection and reporting; information management and design; and assessment coordination.”<sup>271</sup> EIMAC lobbies for diminishing the obstacles to robust data-collection: “EIMAC advocates on behalf of states to reduce data collection

burden and improve the overall quality of the data collected *at the national level*” (emphasis added).<sup>272</sup>

Also connected to CEDS is the Assessment Interoperability Framework (AIF), which addresses multiple technical issues related to student assessments (such as test-item creation, alignment to Common Core, and “scoring to deliver student results back to the reporting system and eventually into the student information . . . system”).<sup>273</sup> The goal is to “speed up the transfer of data for the entire assessment enterprise” and “to allow for the transfer of assessment-related data across applications within a district, between a district and state agency, and across state lines.”<sup>274</sup> AIF’s funding comes from several sources, including USED through RttT.<sup>275</sup>

Although USED insists it is not interested in establishing a national student database or otherwise having student data leave the student’s home state, the initiatives it is funding all increase the possibility and likelihood of those things happening.

### **Federal MyData Initiative**

USED is also enthusiastic about a new project called the MyData Initiative. The idea behind MyData is that every student can download his or her own education data in human- and machine-readable format.<sup>276</sup> This will become possible “through the participation of schools and software developers who enable students to download their own data to create a personal learning profile that they can keep with them throughout their learning career. In addition, developers are encouraged to create (*sic*) customized services and tools for students based on the information available in their personal learning profile.”<sup>277</sup> In other words, a student can carry his government dossier around with him.

Because much education data is currently scattered across many different platforms (see the discussion about inBloom, above), it is necessary to create a common data standard, or template, so “information created by one tool or service can be consumed by another, and *vice versa*.”<sup>278</sup> At the school-district level, student data is generally stored in a Student Information System (SIS), usually maintained by a vendor such as Pearson. The MyData Initiative is a push for SIS vendors to integrate their systems into the new template so students and parents can have access—perhaps even an app for a smart phone. Key vendors already on board with this effort include Pearson, ETS, Parchment, Houghton Mifflin Harcourt, and Microsoft.<sup>279</sup>

How might this initiative be a threat to privacy? Consider these possible dangers:

- A parent’s or student’s computer or phone is lost, stolen, or hacked.
- A third-party vendor lures parents with the promise of a wonderful online tutorial service. Parents upload their child’s data, which is then stolen or sold. At a minimum, parents may fall prey to grandiose claims about “personalized” education apps that are either a waste of money or, if effective, another tool that will be available only to more well-off families.
- According to Marina Martin, former head of USED’s Education Data Initiative, this initiative could “fuel a gigantic ecosystem of apps” where data could be uploaded to help people make decisions.<sup>280</sup> This presents real dangers if students or parents are careless in uploading data to any new education app that has effective marketing but lax security (or malign intentions).<sup>281</sup>

And of course, building a successful MyData platform will require interoperability across various governmental data systems, making education data even more easily shared with other agencies.

### **The Common Core Tax**

In June 2013, the White House took a related step toward “transforming” American education by announcing a new initiative called ConnectEd, essentially a rebranding and expansion of a federal phone tax, called E-Rate, which subsidizes Internet access for schools and libraries. The administration’s goal with ConnectEd is to “within five years, connect 99 percent of America’s students in the digital age through next-generation broadband and high-speed wireless in their schools and libraries.”<sup>282</sup>

There can certainly be value in increasing schools’ Internet access. For example, with greater connectivity, teachers can access more and better learning resources. Without digital instruction, government cannot optimally collect data about “each student’s strengths and weaknesses” through “real-time assessments of student learning”—“breakthrough advances in assessing understanding and mastery.”<sup>283</sup>

ConnectEd also addresses a more immediate problem: Most schools do not have the technological capability to administer Common Core national tests, since these will require all-online test-taking by 2017. The nonprofit Education Superhighway estimates 77 percent of schools do not have the bandwidth to administer online tests,<sup>284</sup> let alone the necessary hardware and IT support. Some states have already dropped out of the federal testing programs because of the prohibitive costs.<sup>285</sup>

Secretary Duncan responded by explicitly tying the E-Rate expansion to getting schools the bandwidth to administer Common Core national tests.<sup>286</sup> The Federal Communications Commission (FCC) says the tax increase will amount to only \$5 annually per long-distance phone line, and believes it does not need Congress's permission to increase this tax.<sup>287</sup> Republican FCC commissioners have said E-Rate expansion is riddled with waste, fraud and abuse and have called for the program to be ended. Yet it appears that all the commissioners support the tax increase.<sup>288</sup> For example, a Government Accountability Office study found E-Rate does not disburse a quarter of its grants on schedule, is frustratingly complex, and does not evaluate its own performance.<sup>289</sup> Whether the federal government has the constitutional authority to decide what technology local school districts should or should not have is also unclear.

### **Student Unit Records**

Several U.S. senators have recently proposed creating a national student unit record system for higher education. A student unit record system is a database that tracks students as they move through higher education—which sometimes includes multiple institutions—and into jobs. Establishment of such a system would require overturning the federal ban on creating national student databases unless the bill evades that ban by “stitching together” existing databases,<sup>290</sup> as this report noted earlier is being accomplished in myriad sectors from birth through the workforce.

The idea behind a student unit record system is to determine what taxpayers are getting for the billions they pour into college subsidies every year, as the effectiveness of a college degree in securing desirable employment

declines. Advocates say the federal government should demand, in exchange for subsidies, that colleges show how many of their graduates find jobs.<sup>291</sup>

“But a federal unit record system is only designed to answer questions no one is asking, namely: how do we bring No Child Left Behind and its command and control mentality to higher education,” a senior legislative aide told *Inside Higher Ed* in 2013.<sup>292</sup> In addition, there is little evidence to prove using more data to more deeply regulate higher education will be effective to solve problems that are more likely created by federal higher-education subsidies<sup>293</sup> and overregulation of the U.S. economy.

Not surprisingly, the data-obsessed Gates Foundation sponsored a series of white papers in 2013 that overwhelmingly supported creating a student-unit record system. In response, David Warren, president of the National Association of Independent Colleges and Universities, said, “We do not believe that the price for enrolling in college should be permanent entry into a massive data registry.”<sup>294</sup> Students and parents are likely to agree.

### **The Problem of Hacking**

So far this paper has primarily discussed the types of data that would be stored in large, centrally located computer databases. Besides the legal, social, and philosophical problems with such collection, there is a practical problem. The huge push for enhanced, greatly enlarged, centrally located student databases creates enormously tempting targets for hackers and identity thieves.<sup>295</sup> Already, according to the Privacy Rights Clearinghouse, 14,423,174 student records have been lost from 725 security lapses between 2005 and April 12, 2014.<sup>296</sup>

One of the most attractive pieces of information often found in education records is student Social Security numbers. Unless prohibited by state law, schools may collect and use Social Security numbers.<sup>297</sup> Indeed, some states maintain they must have these numbers “to connect K-12 records to higher education and workforce data . . . .”<sup>298</sup> An official of the Gates-funded Data Quality Campaign, while calling for enhanced privacy protections, supported the collection of Social Security numbers because they provide “enhanced analytical opportunities.”<sup>299</sup>

But a child’s Social Security number is a prize for an identity thief because the number is unattached to any credit history and therefore can be easily paired with a new name and birth date.<sup>300</sup> Examples abound of data breaches involving student Social Security numbers, from a database hacking of 63,000 student numbers in El Paso,<sup>301</sup> to stolen laptops containing the numbers of 8,000 special-education students in Palatine, Illinois.<sup>302</sup>

An example of the lengths to which hackers will go to access “private” student data occurred in Kentucky in August 2013. In what was described as a “worldwide, coordinated attack” on the Kentucky Department of Education’s Infinite Campus information network, the Kentucky DOE was forced to shut down its parent portal and prevent parent access to student data.<sup>303</sup> In this case the firewalls purportedly did prevent actual hacker access to the data. But the sophistication of the attack (hundreds of different sites initiating attacks and interfering with attempts to bring the system back online)<sup>304</sup> is a sign of the increased attention these treasure troves of student data are attracting from increasingly sophisticated digital malefactors.

Another illustration of the ease of wreaking technological havoc is the debacle that occurred in the Los Angeles Unified School District in 2013.<sup>305</sup> The district spent \$500 million purchasing iPad tablets for every student. Just two weeks after the tablets were distributed, about 300 high-school students were able to breach the security protections and access off-limits social media sites. (The iPads were expected to be used for administering Smarter Balanced tests, but this episode has eroded confidence that security will be sufficient for the testing.)

Especially alarming to parents is the possibility that children’s personal information could be accessed by predators. Information such as children’s names, addresses, phone numbers, bus pickup schedules, and email addresses would be extremely useful to a hacker with nefarious motives. Even knowing what sports teams children play on (along with practice and game schedules) could prove very tempting to a predator.

The more personal information an education database contains, the greater the threat to children’s privacy and safety. Most parents have little or no idea about what types of information is being compiled on their children, how it is being used, and to whom it is being disclosed. The enthusiasm of the political and education establishments for compiling and using more and more data, and the technological ability to do so, have raced ahead of busy parents’ ability to keep up. As a result, our society has move closer to the Progressive approach of facilitating decision making by “experts” when it comes to complex public policy issues.

## **Do We Need Brain Readers?**

The student data sought by supporters of the Progressives' vision extends beyond just academic data. They also seek to record the most minute things concerning an individual's mind and person. The most troubling indication that this type of data-collection will indeed be used in education comes from research currently underway within the federal government, including within USED. Another troubling indication of the possibilities of such research comes from a recent report showing that the federal government is exploring how to use psychological research and behavioral science to mold the behaviors of citizens.<sup>306</sup> USED is one of the many federal agencies that have already taken part in "behavioral insights" projects, but such research is occurring both within government and the private sector, and often in conjunction.

## **Knewton and Brain Mapping**

This goal of collecting and assessing data on every student's individual strengths and weaknesses has prompted numerous research projects designed to read a student's brain. For example, Arizona State University has been experimenting with cutting-edge adaptive learning software created and sold by a company called Knewton. Its big goal is to "create individual, psychometric profiles that would presume to say, with statistical authority, what students know and how they learn," according to *Inside Higher Ed*. "Such records could theoretically follow those students into the job market, profoundly affecting how they are viewed by graduate school admissions committees and potential employers."<sup>307</sup> Knewton's first step into creating such digital-learning profiles, where students are assigned material tailored to

what they know about the material required, is introductory university math courses. Some of these classes have seen a boost in pass rates, while others have not. ASU plans to expand the approach into economics, psychology, biology, chemistry, and physics classes.

Essentially, Knewton software tracks the time students spend on specific online portions of text, videos, and images, then attempts to relate that to how they perform on later tests and assignments. As it measures and compares hundreds and thousands of students' travels through the online classes, the software and its engineers look for patterns and use that information to fine-tune what future material students receive and when.

This is standard in adaptive learning, but Knewton goes further. Its software has constructed a "knowledge graph," or "comprehensive map of how different [learning] concepts are related to one another."<sup>308</sup> Then it labels each paragraph, video, and image with one or more of these concepts and attempts to find relationships between how students learn each minute piece of information and how that influences their performance in the class. So, for example, it tracks how a student learns about the area of triangles and seeks the relationship between that and how the student learns about the area of rectangles, or how the student learns to conduct a chemistry experiment. It can discover, say, a student's attention span for specific topics. In order to access, study, and organize this data without running afoul of student privacy laws, universities that use Knewton software designate the contractor as a "school official." Knewton also owns the data it collects.

Using the data it has collected, Knewton has constructed a taxonomy for academic concepts similar to how websites use “tags” and meta-data to indicate and organize their content for search engines and visitors. Common Core provides a similar taxonomy for K-12. These taxonomies provide Knewton “millions of data per student per day” of extremely intimate information about how each student learns. The company expects it will soon be in the billions.

The people who run Knewton worry less about whether they will keep the data secure than whether students will be able to—meaning, since each student who uses their software graduates with an enormously detailed learning profile, what happens when companies demand a look at that profile before they consider hiring the student? This concern is illuminated by USED’s MyData Initiative, described above.<sup>309</sup> What would prevent a prospective employer from requesting a peek at that data?

### **Embedded, New-Age Testing**

Progressive education reformers constantly stress the need to develop cutting-edge, “beyond the bubble” assessments that can measure “higher-order thinking.”<sup>310</sup> What they mean by that is testing not students’ academic knowledge, but evaluating non-academic attributes.

The federal Common Core-aligned assessments have already committed to measuring such non-academic skills.<sup>311</sup> Other testing companies are eager to help with similar assessments. Consider the ACT WorkKeys test. ACT offers a variety of tests, from standardized tests in English and math from grades 3-8, to its well-known college entrance exam, to tests meant to measure workforce skills. Alaska, Illinois,

and Michigan have all students take ACT’s workforce test, WorkKeys, and North Dakota and Wyoming require either WorkKeys or ACT’s college entrance exam.<sup>312</sup>

WorkKeys measures specific knowledge or abilities such as business writing and locating information, as well as “soft skills” such as teamwork, tolerance, enthusiasm, and dependability.<sup>313</sup> Because they measure such soft skills and not just objective knowledge, the tests are not just educational or skills assessments but also attitudinal and psychological tests. Completing three of the nine WorkKeys divisions grants a test-taker a National Career Readiness Certificate. The assessments are designed to show employers whom to hire, and the results indicate which careers its creators think a test taker is best suited to enter (which, of course, may or may not correspond to what he wants to do).<sup>314</sup>

This interest in “soft skill” assessment is spilling over into other ACT tests that states are administering to students. ACT’s new product, Aspire, aims to measure children against the Common Core standards, and not once at the end of the year, but several times annually. These tests will also feature “video game” components where students may, for example, conduct a virtual chemistry lab.<sup>315</sup> (It is unclear how such tests would be administered or serve as a reliable measure of students whose parents don’t allow them to play video games.) A related test, called Engage, measures middle schoolers’ soft skills, such as “whether they can manage their feelings, work well with others, and finish what they have started.”<sup>316</sup> According to ACT Vice President Paul Weeks, because many parents do not pay attention, the idea is to warn school officials so they can intervene before children drop out or hurt themselves.

### Thinking Locally, Acting Globally

The digital revolution and its attendant data collection are explicitly connected to the Tucker vision of “human-resource development.” In 2011, Secretary Duncan spoke at the launch of the MacArthur Foundation Digital Media and Lifelong Learning Competition.<sup>317</sup> The goal of this competition is to advance the concept of “digital badges”—encouraging students to demonstrate “competency” in industry-approved skills, gained either in “schools, colleges or adult education centers, or in afterschool, workplace, military or community settings.”<sup>318</sup>

Digital badges could free people to sidestep our cultural prejudice against job-seekers without a college degree. Alternative, trustworthy workforce credentials are an obvious area of need. When entwined with government, however, digital badges could also have unintended consequences: will, for example, a person who chooses not to go through the badge process forfeit access to certain jobs? And of course, government would have to collect data on which citizens have earned which badges and therefore possess which competencies. This would be a giant step toward not only a national human-resources system, but more broadly, Secretary Duncan’s lofty goal of “harnessing education’s power to unleash the full measure of human potential” through the administration’s “systemic, cradle-to-career vision for reform.”<sup>319</sup>

Plans to achieve this goal are also laid out in a 2010 report from USED’s Office of Educational Technology entitled “Transforming American Education: Learning Powered by Technology.”<sup>320</sup> The contemplated transformation will require

tackling “grand challenge problems,” including the ultimate challenge: “establishing an integrated end-to-end real-time system for managing learning outcomes and costs across our entire education system at all levels.”<sup>321</sup> For such a grandiose goal, data-mining and –sharing is crucial. Through digital learning and the “data exhaust” it generates, it will be possible to “[d]esign . . . an integrated approach for capturing, aggregating, mining, and sharing content, student learning, and financial data cost-effectively for multiple purposes across many learning platforms and data systems in near real time.”<sup>322</sup>

This student-learning data should be “broadly available to decision-makers at all levels of our education system—individual educators, schools, districts, states, and the federal government.”<sup>323</sup> The report bemoans the restrictiveness of FERPA in regulating student data-sharing, claiming that liberating decision-makers from some of the FERPA protections would enhance student learning.<sup>324</sup> Less than two years later, of course, USED solved this problem by gutting FERPA. Finally, another suggestion. Finally, the result of another suggestion from USED would be a double-edged sword: “[E]lectronic learning records could stay with students throughout their lives, accumulating evidence of student growth across courses and across school years.”<sup>325</sup> Life-long learning will lead to life-long dossiers.

But the critical byproduct of “data-driven learning” is less a student’s external data—his demographic information, academic performance, *et cetera*—than his internal data: how his brain works, and the resulting values, attitudes, and dispositions he harbors. This threatens to transform education from the transmission of academic knowledge to

inculcation of values, and to change the role of schools from producing students who know a lot to producing workers.<sup>326</sup>

This intention is made clear in a CCSSO report about a multistate initiative called the Innovation Lab Network (ILN). Seeking to define “college- and career-readiness,” a phrase often used interchangeably with Common Core, the ILN asserts that 21<sup>st</sup>-century knowledge and skills “require the development of underlying dispositions or behavioral capacities (such as self-regulation, persistence, adaptability) that enable lifelong pursuit of learning.”<sup>327</sup> And any attributes that are to be developed must be measured.<sup>328</sup> The resulting data will help educators determine whether students have the correct “mindsets.”

USED’s “Transforming American Education” emphasizes the potential for technology to produce enormous amounts of data on each student through the student’s interaction with the technology. “As students work, the system can capture their inputs and collect evidence of their problem-solving sequences, knowledge, and strategy use, as reflected by the information each student selects or inputs, the number of attempts they make, the number of hints and feedback given, and the time allocation across parts of the problem.”<sup>329</sup> All this data can be employed to assess and develop students’ non-cognitive characteristics, such as motivation and effort.<sup>330</sup>

Some say critics are exaggerating the threats associated with these new technologies. But consider what is already being done in other arenas. The video gaming platform Xbox has recently released a system that watches its users in their living rooms and can track how people respond to ads. It can distinguish and record up to six voices in the room where it is

connected, respond to voice commands, and detect heart rates, pupil dilation, and skeletal movement.<sup>331</sup> Recent disclosures have shown that the National Security Agency already eavesdrops on gamers who play Xbox, World of Warcraft, and Second Life.<sup>332</sup> We cannot dismiss the possibility that existing technology can access the classroom.

USED is actually the first federal agency to create a single inventory of its myriad data collections,<sup>333</sup> which went public in December 2013.<sup>334</sup> Businesses and education leaders are publicly anticipating the potential to obtain far more in-depth data about students through computerized education software and tests that can record how long students spend on particular problems and tasks, what they read, and how long they read, and catalog every question they’ve ever answered and compare their detailed performance to that of thousands of other students.

### **MRIs in the Classroom**

In February 2013, USED reported on what could be called “brave new world” ventures and how the federal government can encourage and fund them, as well as conduct public messaging campaigns to teachers, administrators, and parents “who may not understand the importance of investing resources in these priorities.”<sup>336</sup> USED’s *Promoting Grit, Tenacity, and Perseverance* report noted that not just “content knowledge” but “beliefs, attitudes, dispositions, values, and ways of perceiving oneself”<sup>337</sup> are crucial to education success, and expressed a strong interest in beginning to monitor and evaluate these beliefs and behaviors. “New technologies using educational data mining and ‘affective computing’...are beginning to focus on ‘micro-level’ moment-by-moment data within digital and blended-

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learning environments to provide feedback to adapt learning tasks to personalized needs. Measurement may also target the *psychological resources*” of students (emphasis original).<sup>338</sup>

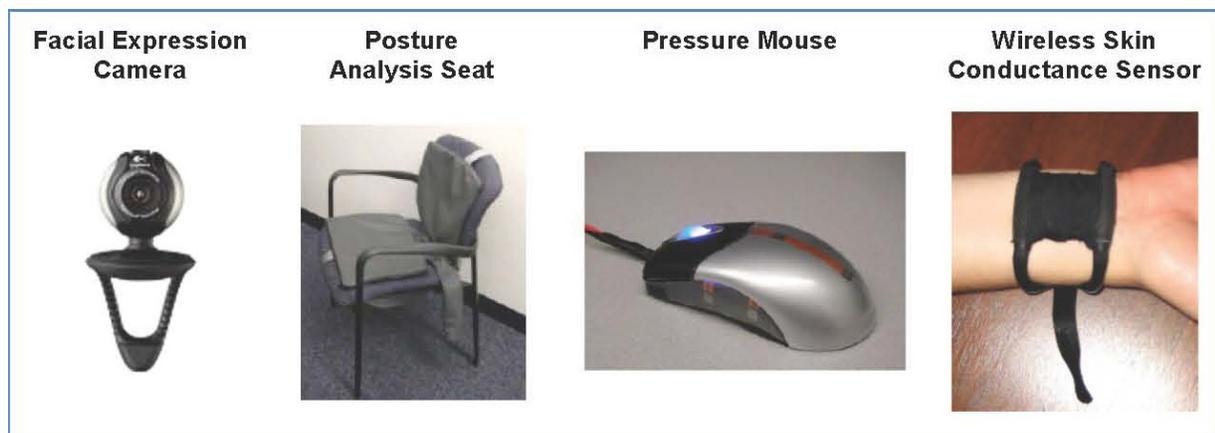
The report discusses how technology can monitor and enhance students’ “21st Century competencies,” which include traits such as “flexibility, adaptability,” “cultural awareness and competence,” “self-regulation,” “physical and psychological health,” “empathy/perspective taking, trust, service orientation,” and “social influence with others.”<sup>339</sup> The report authors note several times that Common Core math standards require “persistence,” which they consider an invitation to begin monitoring student persistence.<sup>340</sup>

While this sort of character development and monitoring used to be performed by families and civil society, the report suggests the world has changed so much that families cannot continue to perform this duty without government involvement. “As the world

becomes increasingly complex, technical, multicultural, and competitive, children and adolescents also face a weakening of the family and informal community support.”<sup>341</sup> The clear implication is that the family cannot be trusted to inculcate the correct values and attitudes. Shifting responsibility to government could weaken families and informal community support for families.

Because most educational and testing research has focused on “cognitive competencies” such as academic knowledge, the report’s authors argue that the federal government and private foundations should instead start funding research into measuring “interpersonal and intrapersonal competencies.”<sup>342</sup> Those would be the behavior- and attitude-tracking noted earlier. To do this, researchers could employ “functional Magnetic Resonance Imaging (fMRI) and physiological indicators [that] offer insight into the biology and neuroscience underlying observed student behaviors.”<sup>343</sup>

**Exhibit 11. Four parallel streams of affective sensors used while a student is engaged in *Wayang Outpost*, an online tutoring system**



Source: <http://www.ed.gov/edblogs/technology/files/2013/02/OET-Draft-Grit-Report-2-17-13.pdf>

One of the many methods researchers can use to gauge student attitudes and behaviors is “informant reports,” in which a parent, teacher, or other observer judges a student’s “grit, tenacity, persistence, and other psychological resources.” To measure student responses to certain educational software or classroom activities, researchers can also hook students up to devices such as cameras that record facial expressions, chairs that record posture and movements, pressure-sensitive computer mice, and skin sensors.<sup>345</sup> Machines such as MRIs, electroencephalograms (EEGs), and skin sensors “may not be practical for use in the classroom,” the report non-ironically notes.<sup>346</sup> Most parents probably feel that practicality is the least of the problems.

If classroom use of these measuring devices seems unlikely, consider these comments from a professional in the field of education technology. He points out that much of the technology most people are now accustomed to, such as smart phones and tablets—which are also increasingly common in the classroom—can measure non-cognitive attributes. For example,

Nearly all new phones have at least one camera. The ones with two allow the user to flip from one side to the other and show themselves or others on the screen. . . . [T]here are already a number of Apps available that will “read” your expressions and develop an “avatar” for your social media. This technology by definition “sees” the expressions on your face. Other, more subversive features, will allow someone to monitor how you react to certain stimuli and topics. Although this monitoring App is not recognized by the end user, the technology is already inside the [device] and could be turned on/off at the whim of anyone who knows

how to infiltrate the security protocols (like the manufacturer or App developer themselves).<sup>347</sup>

Other capabilities, he reports, include measuring body temperature and analyzing fingerprints through touch-screen technology. Essentially every touch-screen device has USB and other ports with which to integrate current and future technology.

According to this IT specialist, “*All* the manufacturers are aware of its capabilities. Some of the manufacturer’s reps are and some aren’t. I would suspect that most teachers are NOT aware of the actual capabilities. Many of the ones who are aware of the technology’s capabilities don’t believe it will ever be used in that way in their classrooms . . . .”

### **Constant, Hidden Evaluations**

Another USED report out the same month by Office of Educational Technology Director Karen Cator, who is now CEO of Digital Promise, considers similar themes.<sup>348</sup> “Education must capitalize on the trend within technology toward big data,” the report says. “New technology platforms collect data constantly and organize data automatically. As learning resources are deployed on these platforms, learners will generate vast quantities of data. . . . learning systems capture extremely fine-grained information on such things as how students interact with learning resources and with others using the same resource.” This provides data trackers with much more information about the process, not just outcomes, of learning, and lets data collected in multiple places flow more easily into one student profile.<sup>349</sup> Because much of this data-gathering can happen within digital games, students won’t even know they’re being tested.<sup>350</sup> This sort of testing would

end once-yearly achievement tests parents are accustomed to now in favor of constant, hidden assessment.<sup>351</sup>

The report notes such a world is rapidly breaking into schools as teachers and schools adopt online learning materials “to supplement or replace print-based materials such as textbook chapters and exercises.”<sup>352</sup> Common Core and national testing are among many developments that fuel such an education system by creating a single education market various forms of technology can address,<sup>353</sup> as well as providing a detailed list of common education objectives for instruction—digital or in-person—to target at a “micro-level.”<sup>354</sup> As discussed below, with its diminished focus on academic knowledge and increased emphasis on so-called “21<sup>st</sup>-century skills,” Common Core is the perfect platform for launching the type of digital learning that enables this data-collection on students.

When investigating technologies that can assess and perhaps alter student behavior, much can be learned from the research on educating students with disabilities. “Response to Intervention” (RtI) is the term given to a system of continuing assessment and intervention “to maximize student achievement and to reduce behavioral problems” by students with disabilities.<sup>355</sup> Technologies such as “personal computers, game-like curricula, and interactive simulations” have been found helpful in behavior modification,<sup>356</sup> and if it works with one set of students, could the same technologies not be used on all students to achieve the desired behaviors?

### **Measuring Attitudes, Not Knowledge**

To keep up with the rapid pace of technological change, the Cator report says, schools and policy makers should abandon the idea of vetting programs with research and experience before implementing them on a wide scale: “education decision-makers... cannot wait years for the results of a study.”<sup>357</sup> Data-driven learning is necessary because Common Core demands skills expected in “high-performance workplaces,”<sup>358</sup> the report says. Common Core-style 21<sup>st</sup>-century learning requires students who can “think critically and solve complex problems, communicate effectively, work collaboratively, and learn how to learn,” and print-based learning materials from centuries past simply cannot equip students in this regard.<sup>359</sup> The report recommends testing for these abilities.<sup>360</sup>

So federal education officials consider computer learning that captures “micro-level data” essential to accomplish Common Core’s goals.<sup>361</sup> As an example, the report cites free online math tutor Khan Academy, which “combines technology research and development approaches with Wall Street-style financial analysis” of the data patterns and habits of users.<sup>362</sup> In that sense, Khan is not really free to its users, as they trade data about how they use the program for the ability to use it without paying money. This trade is up to families, but should be explicit and transparent so they can make an informed decision about whether to use such services and whether to require greater privacy assurances from such vendors.

The Cator report discusses efforts to make online instruction mimic the best in-person instruction through studying the emotions students experience while learning with a

certain program, their emotional ties to the class and instructor, and their attitude about the class and subject.<sup>363</sup> These include studies on how to find and change the “problematic ideas” students bring into classrooms, such as ideas about the reasons for global weather patterns and events such as earthquakes.<sup>364</sup> USED’s “Transforming American Education” report, discussed earlier, also emphasizes the importance of assessing students’ characteristics “in the contexts of relevant societal issues and problems that people care about in everyday life.”<sup>365</sup> Of course, all of this data-gathering would be subject to the gutted federal student-privacy law FERPA, “using common data standards and policies developed in coordination with the U.S. Department of Education.”<sup>366</sup>

USED also looks favorably on combining datasets about children—data from education, social services, juvenile justice, foster care, youth development—to learn more about “the circumstances of students’ lives” with the ultimate goal of dropout prevention.<sup>367</sup> These include out-of-school activities such as sports teams, community involvement, and library reading habits.<sup>368</sup> Some researchers recommend developing national competency exams for such skills and activities, correlated with Common Core, to give students an “alternate route” to college and a job.<sup>369</sup>

According to the Cator report, USED considers funding digital-learning systems one of its priorities, and to this end has proposed a new agency called Advanced Research Project Agency for Education (ARPA-ED). “ARPA-ED should fund directed development projects so progress can be accelerated and the essential activities of data aggregation and sharing across different research and evaluation efforts

facilitated.”<sup>370</sup> The department also says the federal government should serve as a broker for research about online learning, by joining “other interested agencies” to “fund an objective third-party organization... With so many sources of digital learning resources and the competing claims of different distributors, educators should have reliable, objective information not just about effectiveness but also about implementation issues and usability.”<sup>371</sup> Following the federal lead in this matter, lobbying organization the U.S. Business Roundtable recently recommended establishing a panel of judges to determine which education materials do and do not align with Common Core. A similar evaluation panel sponsored by the same group that shepherded Common Core already exists, called EQUIP.<sup>372</sup>

### **Galvanic Skin Response Study**

As outlined in USED’s *Grit, Tenacity, and Perseverance* report, collecting data on students’ physiological reactions to instruction and testing is theorized to be an effective way to improve education. The Gates Foundation is now funding a pilot study “to measure student engagement physiologically with Galvanic Skin Response (GSR) bracelets, which will determine the feasibility and utility of using such devices more broadly to help students and teachers.”<sup>373</sup> Researchers at Clemson University have been awarded almost half a million dollars to equip students with GSR bracelets to determine the effectiveness of particular types of instruction.

Gates’s original announcement of this research grant stated that it was part of the Measuring Effective Teachers Project.<sup>374</sup> This raised the specter of using this physiological data as part of teacher-evaluation programs. When a small uproar ensued over the

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propriety of evaluating teachers based on their students' emotions, Gates hastened to change the grant description to remove references to *Measuring Effective Teachers*.<sup>375</sup>

School districts nationwide are pursuing similar programs, often related to sports and health. A Missouri district is one of several to hook its students up to wristwatch-like body monitors that track heart rate, steps walked, calories burned, and even sleep cycles.<sup>376</sup> U.S. Sen. Chuck Schumer recently suggested expanding a federal program that attaches tracking devices to Alzheimer's patients to include autistic children, after one autistic young man went missing from his New York City school for nearly a month.<sup>377</sup>

Whatever the uses to which such data will be put, many parents are likely to revolt at the idea of connecting their children to such highly intrusive measuring devices.

### **The Military Meets School Children**

The U.S. military has been involved in education for many decades, as its ability to quickly train soldiers clearly contributes to American military dominance. Online and distance education has been an obvious fit for military training, given its flexibility and portability. The Department of Defense's Advanced Distributed Learning (ADL) Initiative, for example, has two laboratories, one in Alexandria, Virginia and another in Orlando, Florida. These explore, among other things, using games for learning, computer tutors, tech specifications for e-learning called standards (these let computers "talk" to each other using the same language and keep learners on a specified track through material), testing, virtual worlds, and adaptive training (or training that changes in response to what people do while being trained).<sup>378</sup>

The laboratories' research encompasses applications for military, public and private education, technical or trade schools, and self-taught learners. The focus is "next-generation learning," in which computers track students and assign them personalized material, just like all these other cutting-edge education initiatives.

ADL and USED also administer a joint project called the Learning Registry, which provides a taxonomy for classifying education materials. It is a platform for organizing and finding education materials (videos, graphs, lesson plans, reading assignments, *etc.*) and, much like computer HTML language, allows various computers, browsers, and applications to "talk to" each other on the Internet. The Learning Registry not only helps organize content using one filing system, so to speak, like the Dewey Decimal System for libraries, but it also allows those who use its taxonomy to organize and store ratings, comments, number of downloads, alignment with education standards like Common Core, and more.

ADL is also working on a project called Experience API (xAPI), which creates a way to track "learning experiences" through apps, games, virtual environments, simulations, sensors, and even real-world experiences. It can be used to record a student's activities, and to assign and sequence future activities.<sup>379</sup>

The U.S. military has been the federal government's primary agency working with online learning since the 1990s.<sup>380</sup> Elsewhere, it has been involved in civilian education initiatives and intensive studies of the human mind in ways that, should they enter K-12 education, would trouble most Americans. For example, in 2013 the Defense Advanced Research Projects Agency (DARPA) issued a

request for a contractor to create a portable EEG device and corresponding app, to make EEG brain readings extremely cheap and accessible.<sup>381</sup> Currently available devices like this, while quite expensive, undergird marketing research and even let people play computer games or move objects with their mind. But gaming EEGs don't provide the fine-grained detail the military wants about each user's brain. Envisioning potential uses for this science-grade \$30 device and app, DARPA says:

Having EEGs in every classroom in America would engage students in science and technology in a way not previously possible in the field of neuroscience. Teachers could design lesson plans in biology about the brain and sensory systems, and use hands-on demonstrations to engage students. Students could record their own brain activity and download the data to their iPad...Placing these devices in every school would provide an invaluable resource to inspire the next generation of scientists and engineers in America and would provide an unprecedented opportunity for crowd-sourcing in the general population.

In other words, if lots of children start using portable EEGs in class and automatically send all their brain activity to large databases, military and civilian scientists would have an explosion of highly personal information to study and uncover more about not only how each individual user's brain works, but how human brains work, period.

It's one thing for the military to use brain research to enhance surveillance of foreign targets and high-tech military devices. It's entirely another for the military to

discuss deploying brain surveillance on the nation's schoolchildren.<sup>382</sup>

### **Direct Connection to Common Core**

Common Core proponents have repeatedly argued that data-mining is not a part of the Common Core standards and, as such, is a side issue. This is untrue, for several reasons.

First, the memorandum of understanding governors and state superintendents signed that kicked off Common Core defines the project as standards *plus common assessments*.<sup>383</sup> The assessments, of course, are intended to enforce the standards and are the vehicle for collecting information about children. So are Common Core-aligned online instructional materials. "[C]ommon standards are nice in theory, but they only matter when married to common tests," writes Frederick Hess. "By design, such exams will require that every school, everywhere, cover the prescribed content in the prescribed sequence at the prescribed grade level—or risk winding up in the crosshairs when students test poorly."<sup>384</sup>

Second, Home School Legal Defense Association Chairman Mike Farris says Common Core architect David Coleman told him "other people have seized the opportunity to make a centralized data-collection effort through the implementation of the Common Core."<sup>385</sup> So even one of Common Core's lead writers believes the initiative includes data-mining. (Despite this conversation with Farris, Coleman has spoken publicly in his new position as president of College Board, which owns SAT and AP testing, about how excited he is to use President Obama's election data team to mine student data.<sup>386</sup>)

Third, as this report has discussed in great detail, Common Core makes massive,

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unprecedented data-mining on children possible by creating a highly standardized curriculum-control document that every developer can use to design a single set of education materials and assessments that collect such data. This unified taxonomy would have the added advantage of being easy to market nationally.

Fourth, states participating in national Common Core tests have promised to provide the testing consortia unspecified “student-level” data,<sup>387</sup> rather than the aggregate data education leaders are accustomed to releasing for federal accountability purposes. As discussed earlier, Florida elected officials have complained publicly that the testing consortium PARCC has still not listed what student data it will demand of states. Furthermore, PARCC does not plan to do so until sometime in 2014, the year its tests arrive in schools.<sup>388</sup> Both testing organizations have agreed to share data with each other and USED.<sup>389</sup> And participating states have promised, in their contracts with PARCC and SBAC, to change any state laws that stand in the way of Common Core tests.<sup>390</sup> This could easily include weakening state student-privacy laws, and certainly will do so if those laws impede the flow of data across state lines and government agencies. Because of this, entities that are not accountable to taxpayers and voters now hold the keys to state data and testing policies. Furthermore, even if just through test scores, Common Core tests deliberately enforce centrally determined demands for what teachers do with children, and the Progressives’ goals of developing children into a workforce (*e.g.*, “college- and career-readiness”).

Last, Common Core and data-mining are philosophically aligned. Common Core aims

at 21<sup>st</sup>-century, non-academic skills such as persistence, collaboration, and creativity, as “college- and career-readiness.” The goal is workforce preparation—not citizenship, the advancement of the human person, or beholding the good, true, and beautiful. Those who proclaim the great possibilities of data-collection and Common Core see them as a pair of buggy horses for “aligning education institutions and workforce training efforts with the projected demands of tomorrow’s labor market,”<sup>391</sup> to quote current NGA chair and Oklahoma Gov. Mary Fallin. In short, Common Core, testing, and data-collection are inseparable, and are so by design.

On October 9, 2012 and January 15, 2014, USED held “Education Datapalooza” events at the White House (not to be confused with Datapaloozas the White House has also held on higher education and healthcare).<sup>392</sup> At the events, education and technology leaders mentioned how Common Core facilitates Big Data in education, because it provides a taxonomy for discrete skills that can be assigned, monitored, and rearranged for children to take specific academic or career paths. At the 2012 Datapalooza, eScholar CEO Shawn Bay summed up the data vendors’ view of Common Core: “This is the glue that ties everything together.”<sup>393</sup>

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“I am a deep believer in the power of data to drive our decisions. Data gives us the roadmap to reform. It tells us where we are, where we need to go, and who is most at risk.”

—U.S. Education Secretary Arne Duncan<sup>394</sup>

## **Deeper Problems with Intrusive Data-Collection**

The inner sanctuary where a person can retreat and examine himself and his problems is crucial to the development of personhood, intellect, and character. “In the United States, privacy is not only seen as a very positive condition, but it is also viewed as a requirement that all humans would find equally necessary, desirable and satisfying.”<sup>395</sup> The famous ancient Greek aphorism “know thyself” has long indicated the prize Western intellectual culture has placed on discernment, wisdom, and good judgment. When a person’s deepest thoughts and beliefs are laid bare to the dissection and mockery of the world at large, the individual often sustains psychological damage. This is why, in the psychology, medical, and clerical professions, it is a matter of strict professional ethics to very closely guard the privacy of those under care.

Dr. Gary Thompson, a clinical psychologist and psychological-assessment expert, discusses the psychological dangers of eroding privacy occasioned by Common Core tests based on his review of related policies and documents.<sup>396</sup> In modern cognitive and psychological tests, he writes, “the level of information provided about a particular child is both highly sensitive and extremely personal in nature. They are also extremely accurate.” Tests that measure children’s dispositions, social skills, behavior, and so forth, as USED believes Common Core calls for, are of this same type. They are so accurate and revealing that the U.S. military, law enforcement, and social services all use them, and for this reason the management of such tests typically falls under strict ethical and legal protections. Not only this, but,

according to Dr. Thompson, test designers can easily embed behavioral characteristics into a typical education test that parents and teachers think is only measuring reading and math.<sup>397</sup> To prevent this and provide accountability for such behavior, Thompson urges that independent experts be allowed to review the tests children take under Common Core. So far, this is not planned.

Further, Dr. Thompson says, when tests results are used improperly or released outside the area of the tested individual’s consent, they can “cause psychological trauma.”<sup>398</sup> Despite this, Common Core testing will “develop highly accurate predictive tests with no stated ethical procedures, guidelines, or institutional controls.” He concludes:

Given the gravity of these issues, I cannot professionally endorse the Common Core State Standards as currently written until pointed clarification is provided by politicians and educators from both [parties] endorsing CCSS. Nor in good conscience can I enroll my toddler in a public school system that utilizes CCSS until these issues are clarified to my satisfaction. The issues involving psychological testing and privacy are issues that should be of concern to every parent with a child enrolled in public school. The power granted federal and state education administrators via the regulations of CCSS are unprecedented in nature.

### **How Data-Collection Affects Civil Society**

Considering how needless or reckless data-collection can affect an individual and his fundamental civil rights begs consideration of whether data-collection affects the relationship between government and the people.

The American Experiment rests on a foundation in which the people, buttressed by unalienable, infinitely sourced rights, direct government. With respect to all “earthly” powers, the people are the “original supreme Sovereign.”<sup>399</sup> The people delegate their power—that is, their sovereignty—“in such proportions, to such bodies, on such terms, and under such limitations, as they think proper.” The supreme power, however, remains “in the People, as the fountain of government” and “the people have not . . . and ought not . . . part with it to any government whatsoever.”<sup>401</sup>

Through the Constitution, the Framers intended to build upon the founding: “On the same certain and solid foundation [our constitutional] system [was] erected.”<sup>402</sup> In particular, in furtherance of those principles the Framers developed a “compound republic.”<sup>403</sup> In it, “the power surrendered by the people is first divided between two distinct governments, and then the portion allotted to each subdivided among distinct and separate departments.”<sup>404</sup> This provided “a double security to the rights of the people. The different governments will control each other, at the same time each will be controlled by itself.”<sup>405</sup>

The constitutional structure continues to have practical meaning today. As the Supreme Court recently noted, by denying any one government complete jurisdiction over all the concerns of public life, the Constitution provided further protection to the “liberty of the individual from arbitrary power.”<sup>406</sup>

Those structural safeguards did not satisfy the concerns of some Framers, however. At the instigation of the anti-federalists, the founding generation amended the

Constitution with the Bill of Rights, which enumerated specific protections against government’s encroachment on liberty. Subsequent generations passed further amendments to protect the dignity and rights of the individual. Together, the constitutional structure and the rights addressed in the Constitution implement the belief that government should be citizen-directed because, ultimately, the citizen is sovereign.

The issue, then, is whether government data-collection efforts threaten to hollow out this longstanding, fundamental, foundational relationship.

### **Privacy and the Supreme Court’s Formulation**

The Constitution does not contain the word “privacy,” yet it is a major theme of constitutional law and commentary. Scholars attribute its source as an American legal principle to the law-review article, *The Right to Privacy*, by Samuel D. Warren and Louis D. Brandeis.<sup>407</sup> There, the authors trace the development of legal actions for trespasses *vi et armis*—trespasses to life and property.<sup>408</sup> Those causes of action (*i.e.*, rights to seek legal redress) originally had narrow scopes. But, as the law “came [to] a recognition of man’s spiritual nature, of his feelings and his intellect,” the scope of the law’s protection broadened so that “the right to life [came] to mean the right to enjoy life—the right to be let alone. . . .”<sup>409</sup>

Years later, as a Supreme Court justice, Brandeis authored the landmark *Olmstead* dissent in which he repeated the thesis of his article. Then, after his death, the Court in *Davis v. United States* characterized “the Fourth Amendment’s central purpose in unmistakably Brandeisian terms as the

‘protection of the privacy of the individual, his ‘right to be let alone.’”<sup>411</sup> The Fourth Amendment, of course, secures “the right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures,” unless specific warrants are issued or exigencies exist, allowing a search. Subsequent case law described this right as “wherever an individual may harbor a reasonable ‘expectation of privacy,’ ... he is entitled to be free from unreasonable governmental intrusion.”<sup>412</sup> This *right to be let alone* branched out beyond Fourth Amendment law so that by the end of the 20<sup>th</sup> century it was reflected in common law and statutory law.<sup>413</sup>

Despite its prevalence, formulation of the privacy right has invited robust criticism for its lack of efficacy. One’s expectation of privacy could diminish if, for example, government passes laws or institutes policies that require the collection of information.<sup>414</sup> In *United States v. Payner*, the Court held that the defendant did not have a privacy expectation in his banking information in part because a statute required that such information be reported.<sup>415</sup> And in *United States v. Miller*, the Court upheld the government’s acquisition of financial information from a bank because, “All of the documents obtained, including financial statements and deposit slips, contain only information voluntarily conveyed to the banks and exposed to their employees in the ordinary course of business.”<sup>416</sup>

The Court further held that such information was no longer private “even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed.”<sup>417</sup> Likewise, in *Smith v. Maryland* the Court rejected the argument

that a telephone company’s recording of the phone numbers dialed from the defendant’s home constituted a search. It reasoned that in using his telephone the defendant “voluntarily conveyed numerical information to the telephone company and ‘exposed’ that information to its equipment in the ordinary course of business.” The Court held that “*a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties.*”<sup>418</sup>

As our business and social lives are increasingly conducted through electronic media, incidental third parties will collect ever-more bits of information, and one’s reasonable expectation of privacy will diminish. Now, powerful data-mining programs comb through massive amounts of public and private records to assemble comprehensive dossiers on individuals that “could provide a window on our lives more revealing than any snooping in our doctor’s offices or intrusions into our homes.”<sup>419</sup> Joint private and governmental activities and initiatives, such as those discussed in this report, will further reduce expectations of privacy.

### **Space for a Personal Life**

In *The End of Privacy*, Professor Jed Rubenfeld argues that the Fourth Amendment has lost its intended focus to guard against the abuse of police power.<sup>420</sup> Rubenfeld notes that the Fourth Amendment’s central idea is that “[f]reedom requires that people be able to live their personal lives without a pervasive, cringing fear of the state.”<sup>421</sup> Its guarantee is one of personal security.<sup>422</sup>

Properly viewed, the Fourth Amendment stands alongside the structural,<sup>423</sup> procedural, and other substantive protections that ensure

government by and for the people. It preserves the right of the people to be secure in, among other things, their papers – the record of their thoughts and actions.<sup>424</sup> People under pressure to refrain from expressing their true opinions or desires are denied the right to be “the men and women they choose to be, rather than the men and women an authority or a majority tells them to be.”<sup>425</sup> This is of paramount importance to the well-being of a republic and, as discussed earlier, to the relationship between parents and their children.

Rubinfeld argues: “We are all familiar with the thought that democracy requires a flourishing ‘public life.’ Less familiar, but equally essential, is the idea that a self-governing people requires a flourishing personal life.”<sup>426</sup> In so arguing, he cites John Stuart Mill for the proposition that the individual needs a “space for personal life well-insulated from the eye of ‘public opinion.’” This is particularly necessary in a democracy “where majority will and public opinion loom so large politically....”<sup>427</sup> “For if people fear to say what they think or act on their principles in personal life, they are most unlikely to do so in public life.”<sup>428</sup> It is axiomatic that fear of government suppresses the confidence of people in their ability to direct government; one cannot direct someone or something that he fears.

### **Increasing Collective Control**

Invariably, federal and state officials alike disclaim nefarious motives or intimidating consequences of government’s data-collection and -mining efforts. But such disclaimers miss the mark. The mere collection and storage of data threatens individual security—that is, the liberty to express one’s true opinions and desires. Professor Daniel Solove has addressed the

power-shifting effect that data-collection can have, noting that the aggregation of data “can increase the power that others have over individuals.”<sup>429</sup>

Bare assertions as to the intended purposes of such data-collection merely highlight an individual’s inadequate control over the content of what is collected and the universe of entities – with various motivations – with which it might be shared. To reasonably allay such concerns, government must protect an individual’s rights to prohibit massive data-collection and to correct errors in the record, and it must enact strict statutory proscriptions on how government uses data that it is authorized to collect. Public-private initiatives further heighten the concerns of the people: They make government unduly responsive to private entities and blur the distinction between governmental and private action. The prevalent view that data-collection capabilities will become increasingly powerful exacerbates this threat. Such concerns naturally provoke people’s concerns about their children’s futures.

There is at least one more vital relationship at stake here: the right of parents to shepherd their children’s upbringing. Parents concerned, for example, about whether attitudinal information is perhaps being collected about their children *or in the future might be collected about them* will guard, if not suppress, what they tell their children. This will diminish the role of parents in their children’s lives and perhaps diminish parents in the eyes of their children. The consequences cannot be fully predicted, but they will no doubt be tragic.

Privacy and data-collection issues will not be solved by the passage of any one bill. But if they are to be solved in a way that protects

basic American principles, addressing family and student educational privacy is a good place to start.

## **Policy Recommendations**

This report has discussed dangers that unchecked data-collection poses to individuals and the United States as a whole. What are some ways to check these dangers?

Parents:

- If your child has any sort of computer login or participates in any computer program (say, a computer vocabulary game or computerized tests) as part of school, his or her data is being automatically logged and compiled through these devices. If this concerns you, ask your school to explain how they will protect your child's privacy. If these protections are not satisfactory, ask the school to modify its contract with the technology provider to guarantee it will not sell or indefinitely compile your child's information.
- If your child's school is implementing digital-learning platforms, insist on an explanation of what kinds of information will be compiled through those platforms. Will the software record data about your child's behaviors and attitudes rather than just his academic knowledge? If so, and if you object to this data-collection, opt out.
- If your child is using a vendor's education apps, verify that the vendor is not mining your child's data to use for marketing or other purposes.
- As always, be vigilant about what happens in your child's classroom. Read all notices schools hand out about data- and information-sharing, and don't sign

off on anything you don't understand. Choose not to provide information when the reasons someone wants it are not explained to your satisfaction.

- When your child takes a standardized test, demand to know what data the assessment will collect and to whom it will be disclosed. Find out if the test measures non-cognitive attributes such as self-control, home environment, *etc.* If any answers are unacceptable to you, opt out.
- Be especially wary of having healthcare services provided to your children at school. These are not subject to the tighter privacy protections required of non-school healthcare providers.
- You are entitled to know what information your school has already collected about your child, and to correcting any errors in that record. All you have to do is ask someone in charge at your child's school.
- Demand that state lawmakers pass strong legislation protecting your child's information.

Schools:

When you sign contracts with technology providers, include clauses that require the vendor to erase student-level information after the contract term has ended, forbid the vendor from selling or sharing student information with any other entity unless mandated by law, and as far as possible provide for student anonymity by using ID numbers and random logins rather than personal identifiers such as names, email addresses, and especially Social Security numbers.

## ■ **Cogs in the Machine**

State policymakers:

- Introduce and vote for legislation to correct the relaxation of FERPA. The legislation should include penalties that will make it not worth a company or nonprofit or agency's while to disobey the law. It is also essential for states to pass student-privacy laws because, even if FERPA is restored or strengthened, the more bulwarks against excessive data-collection, the better. Further, laws made closer to the people who must follow them offer better protection to citizens and the ability to tailor laws to the needs of each state.
- Require state departments of education, local school systems, and schools to include tight privacy protections in all contracts with vendors, contractors, cloud computing services, and so forth.
- Limit the information the state demands that schools collect to the least data required to comply with federal mandates in exchange for federal funds.
- Prohibit state departments of education from accepting federal grants that include any data-collection mandates without prior review and public approval by the legislature.
- Be wary of investing in and implementing any digital-learning platforms without understanding exactly what capabilities they have for compiling data on students, such as measuring psychological resources and other affective assessments. No such platforms should be used without full explanation of their data-collection capabilities to, and consent by, parents.
- Amend any state laws that require parents to opt out of automatic data-

collection and require them instead to opt in. Also amend state laws that penalize parents or children for choosing to opt out of state tests.

- Hold town hall meetings on private and government data-collection.
- Pass comprehensive laws to address the state's authority to collect, whether directly or through private sources, personal data and its authority to pass that data on to others, including the federal government and private entities.

National lawmakers:

- Immediately reaffirm the original privacy protections of FERPA and seek to strengthen that law with one fit for the digital age, which affirms individuals' ownership of their own private information.
- Prohibit federal agencies from demanding or accepting student-level data from, or disclosing such data to, any private entity or any health, labor, workforce, social services, education, or other agency.
- Replace demands for data in exchange for federal education funds with federal laws that block grant such funds to states with freedom to spend their education dollars as they see fit. This is the model of the A-PLUS Act, a good step towards ending unproductive and intrusive federal education mandates at all levels.
- Pass legislation that recognizes the right of the individual to exploit (*i.e.*, prohibit the exploitation of) his or her personal information. Such legislation would, of course, have to specify at what point such a right of action vests in the individual (*i.e.*, at what point of data-collection

and -manipulation may an individual  
take action).

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395. L. Robert Kohls, “The Values Americans Live By” (April 1984), *available at* [http://www.claremontmckenna.edu/pages/faculty/alee/extra/American\\_values.html](http://www.claremontmckenna.edu/pages/faculty/alee/extra/American_values.html).

396. “A Mental Health Professional’s Perspective on the Common Core,” Gary Thompson, Truth in American Education (March 25, 2013): <http://truthinamericaneducation.com/common-core-state-standards/a-mental-health-professionals-perspective-on-the-common-core/>.

397. “Adaptive Testing & Utah Common Core,” Gary Thompson and Edward Flint,

letter to Utah Department of Education (April 16, 2013):

<http://www.utahnsagainstcommoncore.com/dr-thompsons-letter-to-superintendent-menlove/>.

398. “A Mental Health Professional’s Perspective on the Common Core,” Gary Thompson, Truth in American Education (March 25, 2013): <http://truthinamericaneducation.com/common-core-state-standards/a-mental-health-professionals-perspective-on-the-common-core/>.

399. James Otis, *The Rights of the British Colonies Asserted and Proved* (1764). The People have that status because:

[A]ll men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.

*Declaration of Independence*. See also *Constitution of the Commonwealth of Massachusetts*, at art. I (1780) (“All men are born free and equal, and have certain natural, essential, and unalienable rights”); *Virginia Declaration of Rights*, (June 12, 1776)(“all men are by nature equally free and independent, and have certain inherent rights....”).

400. James Wilson, *Pennsylvania Ratifying Convention*, (Dec. 4, 1787).

401. James Wilson, *Pennsylvania Ratifying Convention*, (Dec. 4, 1787).

402. James Wilson, *Pennsylvania Ratifying Convention*, (Dec. 4, 1787).

403. See James Madison, *Federalist Papers*, no. 51 (1788).

404. James Madison, *Federalist Papers*, no. 51 (1788).

405. James Madison, *Federalist Papers*, no. 51 (1788). See also Alexander Hamilton, *Speech to the New York Ratifying Convention* (1788).

406. *Bond v. Unites States*, 564 U.S. \_\_\_, slip op. 09-1227 at p. 9 (June 16, 2011). See also *ibid*, citing *New York v. United States*, 505 U.S. 144, 181 (1992) (quoting *Coleman v. Thompson*, 501 U.S. 722, 759 (1991) (Blackmun, J., dissenting) (““State sovereignty is not just an end in itself: ‘Rather federalism secures to citizens the liberties that derive from the diffusion of sovereign power.’”)).

407. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 115-16 (2008).

408. Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 Harv. L. Rev. 193 (1890).

409. Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 Harv. L. Rev. 193 (1890).

410. *Olmstead v. United States*, 277 U.S. 438, 471-85 (1928)(Brandeis, J., dissenting).

411. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 116 (2008)(quoting *Davis v. United States*, 328 U.S. 582, 587 (1946)(emphasis added)).

412. *Terry v. Ohio*, 392 U.S. 1, 9 (1968)(quoting *Katz v. U.S.*, 390 U.S. 347, 361 (1967) (Harlan, J., concurring)).

413. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 116 (2008).

414. Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 107 n.25 (2008).

415. 447 U.S. 727, 732 n.4 (1980).

416. *United States v. Miller*, 425 U.S. 435 (1976).

417. *United States v. Miller*, 425 U.S. 435, 442 (1976).

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418. *Smith v. Maryland*, 442 U.S. 735, 744 (1979).

419. Joseph T. Thai, *Is Data Mining Ever a Search Under Justice Stevens's Fourth Amendment*, 74 Fordham L. Rev. 1750 (2006). In fact, it is difficult to classify data-mining itself, whether conducted by government or by third parties, as an incursion into an individual's privacy; it "merely reveals and rearranges information already compromised by third-party conveyances." *Ibid* at 1753.

420. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 119 (2008). From a historical perspective, the Amendment's necessity became apparent as the result of government incursions in the United Kingdom and in colonial America. Those incursions included searches of private residences for papers connected to seditious libel. See *Entick v. Carrington*, 95 Eng. Rep. 807 (1765); *Wilkes v. Wood*, 98 Eng. Rep. 489 (1763).

421. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 127 (2008).

422. *Ibid* (noting that the first words of the Fourth Amendment are: "The right of the people to be secure in their persons, houses, papers, and effects...").

423. See discussion, *supra*.

424. Notably, many of the motivating cases for the Fourth Amendment also included concerns that became foundational for the First Amendment. *E.g.*, *Entick and Wilkes*.

425. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 127-28 (2008).

426. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 128 (2008).

427. *Ibid* (citing John Stuart Mill, *On Liberty*, 11-13, 70, 71, 81 (Elizabeth Rapaport ed., Hackett Publ'g Co. 1978) (1859)).

428. Jed Rubenfeld, *The End of Privacy*, 61 Stanford L. Rev. 101, 128 (2008).

429. Daniel J. Solove, *A Taxonomy of Privacy*, 154 Univ. of Penn. Law Rev. 477, 507 (2006). Governmental threat to the security of the home has been repeatedly referred to as a "badge of slavery." See, *e.g.*, William Cuddihy and B. Carmon Hardy, *A Man's House Was Not His Castle: Origins of the Fourth Amendment to the United States Constitution*, 37 William and Mary Quarterly 371-400, 378 (1980) and at p. 383 (noting that the London City government complained that exposing private houses to capricious searches erased the distinction between England and despotic governments elsewhere.); James Otis, *On the Writs of Assistance*, (Feb. 1761) (referring to the writs as "instruments of slavery")(reprinted in *The Constitution of the United States of America and Selected Writings of the Founding Fathers*, p.7 (Barnes and Noble 2012)).



