1-1-2014

Research and History of Policies in K-12 Online and Blended Learning

Kerry Rice
Boise State University

Chapter 3

Research and History of Policies in K-12 Online and Blended Learning

Kerry Rice, *Boise State University, krice@boisestate.edu*

Abstract

This chapter provides a historical review of U. S. education policy from its earliest inception to the present day with a focus on policy developments in the 21st century that have influenced the growth and development of online and blended education and those that we can foresee will have the greatest impact moving forward. 21st century policies are synthesized into themes of Online and Distance Learning, Accountability, Innovation and Reform, and Teacher Preparation.

Introduction

What is policy? Technically, the term refers to decisions, rules, and regulations enacted through legislation, which can occur at the federal, state, and local levels. Ideally, it is the way in which the preferences of a society flow between public institutions but also how these same institutions influence and shape societal preferences. In reality, policy issues and their resulting legislative action, or inaction as the case may be, is oftentimes controversial and a messy business. Educational policy does not happen in a vacuum. The influence of the reigning political climate, more often than not polarized by competing ideologies, combined with an unpredictable economic climate, all of which in our current era are further fueled by rapid advancements in technology, make for an interesting study.

Policies addressing technology use in education go back some three decades. As early as 1983, when *A Nation at Risk* was published, the authors called for all high school graduates to have an understanding of computers, electronics, and related technologies in both personal and

work environments (U.S. Department of Education, 1983). Since then, numerous federal reports have been written supporting technology use in the classroom. Culp, Honey, and Mandinach (2005), authors of The U.S. Department of Education report; *A Retrospective on Twenty Years of Education Technology Policy*, provide an excellent overview of these historical reports from 1983 to 2003. The story of educational policy does not begin there though. Perhaps the quote by historian James Burke says it best: *"If you don't know where you've come from, you don't know where you are."* In order to understand how we arrived where we are today, it is important to capture the historical context that has influenced the culture that drives our educational systems today.

Burke's quote is a fitting sentiment, in this time of what might be called educational regeneration. Regeneration is a biological term for renewal, restoration, growth, and even transformation, and aptly suited to an educational system that is straining for rebirth under intense pressure to reform. Global competition, dismal achievement reports, failing schools, and industry concerns about an unprepared workforce continue to serve as reminders that we may not be doing a good job of educating our children for the demands of the 21st century. And it seems the more policy decision, or indecision, constrains our attempts to change, the more we resist, subvert, or otherwise find ways to "work-around" existing barriers to that reform. We know this is not unusual, and perhaps even to be expected. In a system that spans across fifty states, each with independent policies of their own, 15,000 school districts and 100,000 schools that serve somewhere in the vicinity of 48 million students at a rate of $2 billion each day, change can be a challenge. But it may not be as slow as it first appears. In the case of online learning, Christensen, Horn, and Johnson refer to this as disruptive innovation, and predict that by 2019, 50% of all high school courses in the U.S will be delivered online (2008).

Indeed, online education has experienced unprecedented growth since its inception at the turn of the 21st century. However, even with growth percentages measured in the double digits, the entire population of students participating in *fully* online virtual schools is a mere ½ to 1 percent of the total public school student population (Molnar, 2014; Watson, Murin, Vashaw, Gemin, & Rapp, 2013). The number is greater when we consider students who participate in supplemental programs and take an online course here and there; almost four million students by some estimates. It is the acceptance and adoption of blended learning by mainstream education where we are beginning to see the greatest, and perhaps the most transformational change in our educational systems to date. The question of the moment is, do we have the capacity and wherewithal to support the kind of overhaul needed to manifest a disruption as great as this?

To try to answer this question, we'll begin with an overview of the historical landscape of educational policy and then fast forward to the policies that are driving transformative change today, with a particular focus on those policies that have the most impact on online and blended learning. This report is divided into two primary sections:

- *Section 1: American Public Education: A Brief History* provides a pre-21st century historical account of educational policy in the U.S. This is the critical foundation on which current educational policy is based and is intended to provide just a brief overview of where we have come and an understanding of the cultural and societal norms that have been highly influential in shaping our educational system.
- *Section 2: 21st Century Themes in Policy and Educational Reform* explores the most influential policies, publications and recommendations influencing the development and growth of online and distance learning in the first decade of the 21st century. Emerging policies and a synthesized analysis of the major policy themes surrounding online and blended learning are identified and then discussed in detail. These themes include accountability, access, innovation and reform, and teacher preparedness.

It should be noted, that in many cases, the reports reviewed are policy recommendations, rather than legislated action. Nonetheless, recommendations that begin at the federal or state level are often tied to existing or pending policy initiatives, which are then tied to funding, so they serve as an accurate depiction of national and state-level policy trends.

American Public Education: A Brief History

The history of American public school is a history of tensions between competing goals, politics, and indefinable purposes. In its earliest configuration, education of a democratic citizenry was of paramount importance on a national level, despite a lack of mention in the constitution (Hirschland & Steinmo, 2003). And we can track through the history of policy, in varying degrees and depending on the societal influences of the time, that education has been seen as a vehicle to promote a dizzying array of purposes including the development of citizenship, personal growth, global competitiveness, content area skills, critical thinking, and workforce training to name just a few (Rice, Siemieniecki, Siemieniecka, & Kelly, unpublished manuscript).

It is in the 1830's when Horace Mann advocated for the Common School that public education was formally recognized as a legitimate enterprise. The end of the 19th century and beginning of the 20th harkened the era of industrialization, a wave of immigrants and the first public comprehensive high school, ostensibly to educate the masses, but in reality accessible only to the elite. Attempts at standardization and equity date back to 1892 when the Com-

mittee of Ten laid the foundation for standardized curriculum. The *1896 Plessy v. Ferguson* Supreme Court decision with its "separate but equal" verdict was the first judicial attempt to address the inequalities in educational opportunities (McBride, 2006).

We begin to see visible and substantial federal involvement in education in the mid 20th century under the U.S. Department of Education's equal access mission. It is an attempt by federal administrators to address states' inadequacies or downright refusal to submit to government recommendations for equity and equality in educational opportunities. The *1954 Brown v. Board of Education* decision, launched the desegregation of schools in the U.S., and Russia's launch of Sputnik into space, resulted in a national call to action for a more rigorous curriculum. In response, Congress passed the *1958 National Defense Act* (NDEA), which among other things, included support for the improvement of science, mathematics, and foreign language instruction in elementary and secondary schools. Other federal legislation and judicial action during the 1960's and 70's addressed inequities in services for low-income, special needs students, and minorities. The *1965 Elementary and Secondary Education Act* (ESEA) is perhaps the most comprehensive effort to address problems of quality and equity in the nation's schools, and includes the *1972 Title I* program of federal assistance for disadvantaged children. Other efforts include *Title VI of the Civil Rights Act of 1964, Title IX,* and *Section 504 of the Rehabilitation Act of 1973*, which prohibit discrimination based on race, sex, and disability. In 1975 the *Individuals with Disabilities Act* (IDEA), a law focused on meeting the needs of special education students, was passed.

The first inklings of the current state of educational reform occurred with the publication of the landmark report, *A Nation at Risk* in 1983. The report, written by the National Commission on Excellence in Education, was in response to the belief that the U.S. was losing its international competitiveness. A poor economy, the infusion of competition from international sources in the technology and car manufacturing sectors, and American students' subpar performance on standardized tests were the drivers then and continue to be drivers now for our current focus on accountability (Christensen, Horn & Johnson, 2008). The accountability and standards movement was further promulgated with enactment of the *Improving America's Schools Act* (IASA), a 1994 reauthorization of ESEA and the associated *Goals 2000: Educate America Act*. These legislative acts were an attempt to systematize school improvement efforts focused on increasing the rigor of state standards and holding states accountable for meeting those standards (U.S. Department of Education, 1994) with stated goals to be achieved by the year 2000, including a 90% graduation rate, universal literacy and first in the world achievement in math and science. Importantly, for our discussion, the *Educate America Act* explicitly

allowed for state discretion in implementing school choice programs. Because most fully online schools are charters, charter school laws, and the legislation regulating them, has been highly influential in their evolution.

I will conclude this brief history of educational policy with the enactment of the *No Child Left Behind Act (NCLB)* in 2001. NCLB was a reauthorization of the 1965 ESEA and perhaps the most highly controversial legislation at the time. This federal legislation, expanding on the *America's Schools Act of 1994*, required the use of explicit metrics to better analyze student achievement data, with the goal to ensure proficiency for every student in every demographic. It was particularly concerned with closing the achievement gap between low income and minority students, and all other students, the adoption of rigorous state standards, and standards-based assessment and accountability. Under NCLB, virtual schools were considered a legitimate option for school choice: *"A virtual school can be among schools to which eligible students are offered the opportunity to transfer as long as that school is a public elementary or secondary school as defined by state law"* (U.S. Department of Education, 2004, p. 13). Virtual schools were considered an acceptable alternative and in some cases, were seen to present the only option for districts that might not otherwise meet the school choice requirements of NCLB with traditional brick and mortar classrooms (Hassel & Terrell, 2004). With the advent of school choice firmly entrenched in policy, and virtual schools recognized as a legitimate option, it is during this time that we see tremendous growth in innovative models of schooling.

When viewing educational policy, both current and historic, it is important to understand two competing themes in U.S. education. First, and perhaps the one sustaining belief until the mid-20th century, has been the belief in local control and authority over educational decisions. Hirschfield and Steinmo (2003) argue that federal intervention existed in the earliest conception of public education. The 1862 Morrill Act with the establishment of the nation's land grant institutions of higher education, "resulted in a unique policy outcome where the federal government ended up providing the greatest of foundations for education throughout the United States, all the while appearing to be out of the way. It is this type of development that contributes to the myth that education is strictly a local issue" (p. 359). Although the belief in local control has been challenged, it still remains a pervasive driving force in the policy arena.

Second, in all cases of federal legislation, federal funds have been tied to compliance with the mandates, laws, and regulations associated with that legislation. In 2011-2012, 10.8 percent of the total estimated 1.15 trillion spent on education nationwide, came from federal sources. This may represent a small percentage of the total budget for education, but given the current

economic climate and progressively dwindling state funding, the federal government can exert enormous pressure on state and local governments to conform to its policies.

It is within these often conflicting messages and cultural norms that U.S. education policy operates, educational systems thrive, or in some cases fail to achieve their intended goals. And when federal policy lags, which it often does, change can be difficult. On the one hand, we have recommendations, and sometimes even the funding for innovation. But our hands are tied by lagging and outdated federal policies that constrain the limits of transformation.

21st Century Themes in Policy and Educational Reform

At the turn of the 21st Century, just a few short years after ubiquitous availability of the Internet, we begin to see policy recommendations targeted directly at K-12 elearning, distance education, or online learning. To provide some perspective, Florida Virtual School, which is now the largest online program in the country with 410,000 course completions (Watson, et al., 2013), was founded in 1997. Successful state-wide supplemental programs like the Michigan Virtual School and Idaho Digital Learning Academy were launched in 1999 and 2000 respectively. The Virtual High School Collaborative, begun as a consortium of 28 schools in 1997 now has a reported 45 member schools (VHS, Inc., 2002; Watson, et al, 2013).

In 2004, the first annual Keeping Pace with K-12 Online Learning report, tracking online education activity and policy at the state level, was published; in 2006, Rice published a comprehensive review of the literature in K-12 distance education, and in 2008, Roblyer outlined the major policy challenges facing our country. You will recognize most of the same policy discussions from those early reports are still relevant today. Issues with funding, curriculum, teacher qualifications, governance, accountability, equity, and access were identified early on. With time, clarity, and an unpredictable future, we have moved on to identify additional policy themes like innovation, efficiency, scalability, and more equitable opportunities for economic and social success (Molnar, 2014).

Identifying legislation and policy related to blended programs presents a greater challenge. In a sense, blended learning is in a developmental stage as we attempt to iron out frameworks and definitions of this "blending" of both mainstream and virtual education. However, true blended models borrow many of the tenets that drive virtual schools, and so many of the challenges are the same. Seat-time policies, flexible scheduling, grade-based assessment, grade-level progression, charter school laws etc. all impact the implementation of the innovative, personalized approaches to education in the U.S.

In the next section, we'll begin first, with a look at seminal policy and reports that address online learning specifically and move into a discussion on the major themes surrounding online and blended learning emerging in the policy arena.

Online and Distance Learning

In 2000, The Web-Based Education Commission charged by Congress and the President with assessing the potential of the Internet for learning, published *The Power of the Internet* for Learning. The authors of the report sounded a national call to action for the federal government to remove barriers to innovations in learning and to embrace e-learning as a centerpiece of federal education policy. In particular, the commission called for recognition of the value of the Internet as a viable delivery method to increase opportunities for learner-centered, anywhere, anytime, any pace educational opportunities, for improved access to Internet resources, and the development of high quality online content.

In the 2001 report, *Any Time, Any Place, Any Path, Any Pace: Taking the Lead on e-Learning Policy,* a study group for the National Association of State Boards of Education concluded that "e-learning will improve American education in valuable ways and should be universally implemented as soon as possible" (p. 4) and recommended that state education policy-makers move decisively in establishing policies that would ensure the rapid and equitable distribution of e-learning opportunities.

In 2000 the U.S. Department of Education published the revised National Educational Technology Plan: *E-Learning: Putting a World Class Education at the Fingertips of All Children* with its recognition that changes in education are driven in large part by digital technologies, and in some part by virtual schools. Particularly relevant is the plan's emphasis on e-learning as a key issue facing federal, state, and local education agencies focused on increasing access to highly qualified teachers, accountability, and teacher professional development through e-learning. It should be noted that the original National Educational Technology Plan, *Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge*, was published in 1996 as a national framework for states in developing technology use plans. The report focused on the use of technology in elementary and secondary education in order to improve student achievement and initiated federal programs such as the *Technology Literacy Challenge Fund* and the *E-rate program*, both programs that infused large sums of money to support technology use in mainstream classrooms. Even at this early date, distance learning, that which was delivered via live interactive transmissions, was noted for improving student achievement as much as traditional methods of instruction. And further, the advantages of using technology to reach

students who would otherwise not have access to quality educational experiences were also recognized.

As early as 2002, states were formally urging systematic reform with online education at the forefront. As an example, the Center on Education Policy report, *Preserving Principles of Public Education in an Online World: What Policy Makers Should be Asking About Virtual Schools* (Fulton & Kober, 2002), provided an action summary for policymakers in implementing virtual education opportunities. The authors called for preserving those elements of public education that we value such as effective preparation for life, work and citizenship, social cohesion and shared culture, universal access and free cost, equity and non-discrimination, public accountability and responsiveness, and religious neutrality, for supplemental rather than full time virtual programs, and for a revision of state policies for attendance, scheduling, and funding formulas to better support the growth and development of virtual programs and schools.

With the requirements of NCLB taking hold across the country, and the expanding interest and notoriety in online education, a newly revised National Educational Technology Plan, *Toward A New Golden Age in American Education: How the Internet, the Law and Today's Students are Revolutionizing Expectations*, was commissioned by Congress and published in 2004. This plan had a different twist from other plans, in that it used data to tell the story of where we were at the time and student voices to articulate where we should be headed. This was a time of significant advances in technology and the Internet, a time when schools had more access to technology and the Internet than ever before, but also a time where it was recognized that digital technologies were underutilized. It was also a time when schools were still debating whether or not there was value in technology at all! The authors of the report called for a new model in teaching and learning, for strengthened leadership, innovative budgeting, improved teacher training, support for elearning and virtual schools, increases in broadband access, a movement toward digital content, and integrated data systems.

These early efforts in the 21st Century set the stage for the latest wave of policy development related to educational reform. Often these recommendations and policies are not directed specifically at online learning, but they can have a significant impact on them. It should also be recognized that not all policy directives are initiated at the national level. In fact, in many, if not most cases, policy is driven at the state level through organized or grass roots initiatives. This is particularly true in the case of online and blended learning, where historically national policy has been slow to respond to transformative educational practices taking place in classrooms across the country.

Jumping ahead to 2010, we have policy guidance from the latest revised National Educational Technology Plan, *Transforming American Education: Learning Powered by Technology,* which called for "revolutionary transformation" in our educational systems, repeating similar dialog from NCLB with references to efficiency and accountability, but with added references to flexibility, competencies, and personalized learning. We also see reference to a set of "core" standards for what students should be able to learn (U.S. Department of Education, 2010a). As in the previous plans, it encourages states, districts, and others, to leverage the power of technology for anytime, anywhere learning opportunities.

Several reports, some of them annually distributed, are helpful in highlighting trends in state-level legislative action. Digital Learning Now examines state policy climates that support educational reform efforts to promote the necessary conditions for high quality, innovative learning opportunities. In their *2013 Digital Learning Report Card* the authors report that "states debated more than 450 digital learning bills with 132 signed into law" (p. 4) building on the 2012 legislative session when 700 bills were introduced with 152 enacted into law. Ten elements of high quality learning were identified and examined in the report: student eligibility, student access, personalized learning, advancement, quality content, quality instruction, quality choices, assessment and accountability, funding, and delivery.

Authors of the second annual report in a series published by the National Education Policy Center (NEPC), estimated that in 2012, 128 bills related specifically to online learning were considered in 31 states (41 enacted, 87 failed). In 2013, 127 bills were considered in 25 states (29 enacted, 7 failed, 92 pending at the time of the report). Significant policy issues identified in the NEPC report include: funding and governance, instructional quality, and recruitment and retention of high quality teachers (Molnar, 2014).

While it may appear that policy, at the state level at least, is keeping pace with rapid advancements and change, the truth is that it is simply not doing so. Some argue that the complexity of change is accelerating at such a fast pace, that policy cannot keep up. While we see pockets of activity and legislative action to address more immediate concerns, and easily solved problems like online charter school laws, legislation addressing the big problems such as equitable funding and accountability, have been slower to appear (Watson, et al, 2013). Nevertheless, substantial policy activity related to online and blended learning has occurred in the following areas:

- Accountability
- Access
- Innovation and Reform

- Teacher Preparedness

The remainder of this chapter will briefly discuss examples of policy action in these areas as they specifically relate to, impact, or influence online and blended learning.

Accountability

For the last three decades we have witnessed a move from a focus on procedural compliance to a focus on learner performance and outcomes. This focus on accountability represents a significant trend and driver for current educational reform and policy development in the U.S. (McDonnell, 2012). At its core, the accountability movement stems from a recognition that school attendance is no longer enough to support the claim that students are learning; there must be demonstrable evidence of learning. Politically, it is a response to disparate performance of students across states and growing frustrations with poor U.S. student performance on international tests indicating a growing decline in global competitiveness. Indeed, the Progamme for International Student Assessment, or PISA, test results for 2012 indicated that American students maintained a longstanding trend since 2000, performing about average in science and reading, but below average in mathematics.

Representative policies related to accountability in online and blended learning environments include the standards movement with its associated focus on standardized assessment, and the rise of learning analytics with a focus on the increased value of data in education.

The Standards Movement

Content area standards, or curricular goals, for subject areas have been a mainstay of the American public educational system since the *Nation at Risk* report in 1983. Historically, states have been responsible for determining their own standards for what students should and would be able to learn; the belief being that the local authorizing agencies would be a better judge of the needs of their constituencies. So the unprecedented adoption by 45 of 50 states of the national *Common Core State Standards* (CCSS) (CCSS, 2012) may seem surprising. However, when one takes into account the historical record, the movement to national standards appears to be an inevitable and natural progression of increased national influence and control (McDonnell, 2012).

The CCSS are built upon the requirements of the *Reauthorization of the U.S. Elementary and Secondary Education Act in 2010* (U.S. Department of Education, 2010 A Blueprint for Reform), which is itself an attempt to ameliorate flaws in NCLB. NCLB expanded the federal

role in education; in particular to improve educational outcomes for minority and disadvantaged students, requiring annual reading and mathematics tests aligned to states academic standards. Standardized assessments are an integral part of the CCSS implementation, just as they were in NCLB. However, the tests proposed by the two major providers, Partnership for Assessment of Readiness for College and Career (PARCC) and the Smarter Balanced Assessment Consortium (SBAC), are according to these organizations, better aligned with highly valued next generation skills in that they are delivered via a computer, adaptive, and performance-based.

Whether in agreement or not, the implementation of the CCSS provides an exceptional advantage for scalability, efficiency, and productivity, particularly in online and blended models of education. For the first time, it is now possible on a national scale to vet, aggregate, and share high quality curriculum and teaching materials. Some states have already initiated clearinghouses for shared, reviewed, and approved online courses (Molner, 2014, p. 16). Illustrating one example of the impact of standardization, Florida enacted legislation in 2013 allowing students to enroll in online courses offered by other districts and to earn credit from massively open online courses (MOOCs). This type of flexible learning opportunity is made possible and more palatable by the existence of common standards and assessments.

Accountability measures, specifically targeted at virtual schools and programs, have increased in visibility and have been approached differently by each state. In 2012 and 2013 eleven states proposed legislation calling for broader assessment and evaluation of online schools (Molnar, 2014). Examples of the wide variability in how states approach policy for virtual schools include attempts to link per-pupil funding to accountability measures in Arizona, which failed, and a $4.3 million investment to support a center for online research and innovation in Michigan. In Tennessee, enrollment restrictions are placed on a virtual school until students have demonstrated a minimum level of achievement growth (Watson, et.al, 2013).

Learning Analytics

Data driven, or data-informed, decision-making has evolved into a vastly more sophisticated concept today, than in the past, and is often referred to as BIG data or learning analytics. Although still in its infancy in education, big data has been around in consumer-driven markets for some time. One reason for the delay is that the data in education has typically not been standardized enough to process using typical analytical methods. Second, educators, policymakers, and administrators have generally been pretty fearful of data, for many reasons.
Data can take on a variety of forms. Traditionally we think of standardized test scores and

other easily accessible data such as attendance and demographics. But data is much more than that and learning analytics has the potential to make great strides, especially in online and blended learning. In online environments, data stored in learning management server logs can provide a very rich source of data for investigating actual learner behaviors - something that is typically very difficult to do in face-to-face environments (Hung, Hsu, & Rice, 2012).

In 2009, $4.35 billion was set aside to support *Race to the Top* (RTT) grants which were focused on innovative school reform and the use of large scale student data systems to improve accountability measures and, it was hoped, student performance outcomes (The White House, n.d.). This was a national effort to measure student performance as well as increase transparency in reporting methods.

The increased collection and use of data in education has raised additional concerns. The *Family Education Rights and Privacy Ac*t (FERPA) (U.S. Department of Education, n.d.) is an example of federal policy enacted to protect the privacy of student education records and has created somewhat unpredictable consequences for the integrated data systems so necessary for accountability measures to be effective and for learning analytics in general. Legal and ethical issues surrounding privacy, ownership, and security can place institutions in a vulnerable position, especially if an analysis of student behaviors is construed as profiling, if sensitive information is collected, if data is released to non-education related parties, or if student data is saved to an externally hosted analytic server (Parry, 2011; U.S. Department of Education, 2012). Due to the emergent nature of learning analytics in education, only time and experience will reveal the full scope of the impact of policy.

Access

The question of equal access to high quality learning opportunities is not a new one. But the advent of the Internet and online learning has brought it to the forefront in ways that were unimaginable even 20 years ago. Improving the nation's infrastructure, supportive school choice policies, federal initiatives to improve global competiveness, and the significant expansion of institutions authorized to deliver publicly funded services have all served as powerful drivers in this policy area.

Equity

There are several recent federal policy initiatives supporting equity in educational opportunities. To ensure that federally guaranteed civil rights are not overwritten by state or local policies, the Equity and Excellent Commission was established in 2011, with the purpose of

informing policy development aimed at examining disparities in educational opportunities that contribute to the achievement gap experienced by low income and minority students in the U.S.

Other federal initiatives are aimed at increasing Internet access through improved infrastructure. The *E-rate program,* which uses revenues from taxes on telephone landlines, has been in existence for some time, and in 2014, $2 billion in repurposed funding from *E-rate* was dedicated to the *ConnectED* program with the goal of connecting 99% of the nation's schools to high speed, wireless broadband within five years. According to the U.S. Department of Education (2013) *ConnectED* will also use existing funding through ESEA to improve the technology skills of teachers.

School Choice

Perhaps the greatest policy influence on the growth of online education, and in some cases blended learning, over the last three decades is school choice. The proliferation of school choice options for students and parents has been a significant driver of the growth in charter schools and other programs that can offer innovative alternatives to traditional educational environments. Charter schools are seen as a tuition free option for quality and choice. In general charter schools are formed under a charter, or contract, and are funded through state appropriations. However, they operate independent of public schools with unique educational approaches (e.g. experiential learning, project-based learning, online learning). In exchange for this operational freedom, they are often required to meet higher levels of accountability than traditional public schools.

Policies governing public charter schools are enacted at the state level, so each state varies, sometimes considerably, on what it will and will not allow as well as the types of restrictions it places on charter school creation, governance, enrollment caps, and funding. Online schools fall under school choice legislation and policies, and are usually governed under charter school law. Although online schools may technically fall under existing charter laws, it has been the case where policies have been enacted that address them more specifically, either favorably or unfavorably. However, whether or not older charter laws can be used to enforce the relatively new introduction of online or blended learning has been a significant challenge facing state policymakers. Oftentimes, it is a matter of how strictly those laws and policies are interpreted that will determine whether online or blended education are allowed. For example, in a recent case in New Jersey, the New Jersey Education Association (NJEA) challenged two charter schools that planned to implement a blended approach because the charter law did not explic-

itly allow for "blended learning." Citing that blended learning fit within the implied intent of the law to allow "non-traditional teaching," the challenge was rejected by the state appellate court (Freeland, 2014).

The National Alliance for Public Charter Schools (2014) estimates a four-fold increase in the number of public charter schools from 1500 schools in 2000, to 6500 schools in 2013 – 2014. Forty-two states have charter laws and charter schools, and served about 2.5 million students nationwide. According to the Center for Educational Reform (2014), favorable charter laws are those that consist of strong, permanent authorizing structures, equitable funding codified in law, and autonomy across state, district, and teacher rules and regulations. Whether or not a state has favorable charter laws is dependent on a variety of factors. In a 2008 examination of the disparity in charter school laws and enrollments, Stoddard and Cocoran (2008) determined that factors such as a higher rate of diversity in a district or state, lower than expected student achievement, and higher than expected school dropout rates were significant predictors of favorable charter laws and greater student enrollments in charter schools.

In states, where online education is allowed, oftentimes charter schools are created and operated using for-profit, education management organizations (EMO's). This may not appear on the surface to be much different from traditional charter schools, which can also be operated by for-profit organizations that develop and manage their programs. The difference in online schools, however, is that students may not be limited to one geographic area and thus can have a much greater impact, and in some cases greater notoriety, across an entire state than place-based charter schools.

Somewhat related are emerging conversations about policies surrounding private and/or independent schools and students who are homeschooled. With mainstream transition to blended learning, private schools, which in the past have been relatively quiet on the subject of online education, have begun to express interest and acceptance of technology rich learning environments. In particular, policy questions revolve around whether or not students attending private schools or those that are homeschooled, can enroll in publicly supported supplemental courses. Eight states have polices that are explicitly favorable to these actions, two states explicitly deny access, while the remaining states either have no publicly supported online programs or have no state level policy explicitly addressing the issue (Watson, et al, 2013).

Privatization and Competition

Competition for education dollars has increased dramatically over the last decade. The significant expansion of institutions authorized to deliver publicly funded services has perhaps been one of the most powerful drivers in recent policy initiatives (McDonnell, 2012). In the U. S. the primary competition to traditional public and private education systems are for-profit institutions. Some believe these for-profit institutions are rapidly disrupting traditional education systems (Christensen & Horn, 2011). In part, because for-profits are entrepreneurial, they can respond to market demand more quickly and increase efficiencies through innovative processes. Although for-profits have traditionally targeted workforce training programs and drawn students who prefer a more vocational education, in the last decade, they have increased their markets to include all academic subject areas and all levels of education from K-12 to terminal degrees.

K-12 for-profit education management organizations (EMO's) have seen significant growth over the past 10-15 years. Grass and Welner estimated that in 2011, they served 68% of full-time virtual school students. Because online schools can operate outside of traditional enrollment boundaries, sometimes throughout an entire state, the potential reach of one for-profit management company can be quite extensive. EMO's have faced increased scrutiny, and in some cases, state level policies that deny them the opportunity to operate at all. Policy in this area tends to be reactionary and focused on challenges surrounding enrollments and boundaries. For example, primarily in response to accountability issues, in 2013 Illinois enacted a one-year moratorium on new virtual charter schools, Tennessee and Iowa legislated virtual school enrollments caps, and Massachusetts established limits and controls on the growth of virtual schools (Molnar, 2014).

Competition in online education also exists in other forms. Many states operate online supplemental programs, which offer distinct courses to schools that may not otherwise have access to qualified teachers for example. Course curriculum, management, and the sale of these courses may be a mix of public and private funding. Course choice legislation addresses the notion of providing students with the option of taking an online course from one of several providers while maintaining enrollment in their home district. Some form of course choice legislation has been enacted in seven states (Watson, et al, 2013).

Global Competitiveness

Maintaining our competitive edge in a global and digital world is really about universal access to education. In other words, providing opportunities for the best educational experiences

possible to the greatest number of learners. Increasingly, opportunities to reach more students with quality education opportunities are made possible through online and blended education. To this end, several important policy trends have evolved.

First, recognizing the importance of access to high quality Science, Technology, Engineering, and Mathematics education is essential to maintaining our global competitiveness, we have seen rising interest in funding initiatives at the federal level for STEM related fields (Crow & Silver, 2008). The Committee on Science, Technology, Engineering and Math Education (CoSTEM), housed within the federal Office of Science and Technology Policy, was codified by the *America COMPETES Reauthorization Act of 2010* and has been tasked with developing a long-term strategic federal STEM education plan. Examples of proposed budget allocations for STEM related investments include $170 million in new funding to support STEM Innovative Networks of schools and colleges, preparing 100,000 STEM teachers, and to establish a national corps of outstanding STEM educators (U.S. Department of Education, n.d.). An example of a state policy is The Utah STEM Action Center which recently made ALEKS, a web-based adaptive learning tool for mathematics, available as part of an $8 million grant initiative by the Utah Governer's Office of Economic Development (Nagel, 2014).

College preparedness is also a high priority. In response to lagging international rankings of college graduates, U. S. federal policy has focused on improving college preparedness of high school graduates as well as increasing the number of graduates from higher education programs. The goal advocated by the administration is that by the year 2020, the U.S. will have the highest proportion of college graduates in the world. This equates to about 60% of the U. S. population. To achieve this goal, several national initiatives have been targeted at making education more affordable, but also at promoting community college enrollments, which are the fastest growing educational sector (46%). An $8 billion *Community College to Career Fund* is just one example of resource allocation to support college enrollments. Accelerated learning opportunities like dual enrollments and advanced placement in high school are other examples that have a particular impact for innovative models of education.

Following in this vein, the federal government has recognized this lack of preparedness as a national security risk. In 2012, a report prepared by a task force established by the Council on Foreign Relations, *U.S. Education Reform and National Security*, was published. The task force identified potential threats from our lack of preparedness including threats to economic growth and competitiveness, physical safety, intellectual property, U.S. global awareness, and U.S. unity and cohesion. They proposed three policy recommendations: 1) Implement common

standards for content areas vital to protecting national security, 2) Make structural changes to provide students with enhanced options and competition with equitable resource allocation, and 3) Launch a national effort to assess whether students are learning the skills and knowledge necessary to safeguard American interests.

Innovation and Reform

Policies in this category represent movements to rethink traditional methods of how we teach and how we measure learning in the most efficient and productive way possible. Often these efforts include both for-profit and non-profit institutions, and may have a large philanthropic influence. Rowen (2002) dubbed this movement as the new "school improvement industry." Policies representative of this category tend to support models that are disruptive in nature, including online and blended education, which represents further evidence of their transformative influence on traditional systems.

Efficiency and Scalability

As the federal government increasingly encourages efforts to improve efficiencies and productivity, federal funding and investments have been focused on developing and scaling programs with demonstrable success. For example, the *Investing in Innovation Fund* is an attempt to create fewer, larger, and more flexible funding streams to assist local agencies. Other initiatives in this area have seen the federal government partnering with very large philanthropic organizations that have a vested interest in improving and/or reforming the U. S. educational system. The *Next Generation Learning Grants* is an example of such a partnership in which the federal government has partnered with The Bill and Melinda Gates Foundation and the William and Flora Hewlett Foundation to help fund innovation in education. Between 2009 and 2011, the Gates Foundation invested $76 million assisting state agencies and local districts in their CCSS efforts (Phillips & Wong, 2012). Over time, these partnerships have resulted in an infusion of billions of dollars in research, grant funding, and the establishment of innovative school models, including online and blended.

While we see efforts by the federal government to encourage efficiency on one hand, on the other, scalability of online programs and schools is being curtailed by some states in favor of a more thoughtful approach. Legislation to carefully assess and evaluate the impact of virtual learning was proposed by eleven states in 2012 and enacted by three; Colorado, Maine, and Michigan. Legislation placing enrollment limits on virtual schools were enacted by Illinois, Tennessee, and Massachusetts (Molnar, 2014).

Redefining School

As states have faced increasing pressure to recognize the value and importance of addressing school in a digital age, they have responded with an array of solutions. Some continue to rely on the more traditional technology integration policies to address the issue of online learning, either preferring a more holistic approach, or taking a wait and see stance, while others have been more proactive in developing policies that directly impact online programs. In 2013, online schools operated in 29 states, 26 states had state supplemental programs, and at least 24 states had blended schools, primarily operating as charters (Watson et al., 2013). Alabama, Florida, Michigan, and Virginia all required an online course for graduation, with similar pending legislation in North Carolina and Arkansas. And online courses were recommended in West Virginia, New Mexico, and Massachusetts (Watson et al., 2013).

On the surface, policy specific to the needs of blended learning environments is less evident. The reasons for this are varied, but one explanation is a lack of understanding by policy makers of either online or blended learning. It is often the definition of online and blended learning that is key in how these types of policies are shaped and implemented and will be an ongoing challenge for federal and state policymakers as they face continued pressure to reassess old policies in a digital world. And it is critical that policies for online and blended education consider the unique nature, substance, and affordances of each type of environment (Rice, 2009).

The *Online Definitions Project* by the International Association for K-12 Online Learning is one attempt to assist policy makers with this task (2011). Similarly, the Clayton Christensen Institute for Disruptive Innovation has worked over several years to develop a usable definition for blended learning along with an implementation framework (Christensen, Horn, & Staker, 2013). Regardless of the specific school or program model, policies that address greater educational needs, such as accountability, seat-time, funding, scalability, and the like, are the very policies that will ultimately determine the fate of the vast majority of innovative schools and programs.

Although true, comprehensive systemic change is hard to come by, we do see some movement in specific policies that impact our widely held cultural beliefs about school. Thirty-nine states allow flexibility in how they approach seat-time requirements, which is the system of equating learning to the amount of time a student spends in a class (Worthen & Pace, 2014). These types of policies are critically important to online learning particularly in attendance and truancy reporting where it can be a daunting task to track student attendance when the student is physically separated from the teacher (Archambault, Kennedy, & Bender, 2013). However,

even in states like Colorado that specifically address online attendance policies, the formula is still based on the amount of time a student spends in a physical classroom (Colorado Department of Education, n.d.). Other state policy areas that deserve attention are those that legislate teacher-to-student ratios. Depending on the approach, online and blended environments may offer a more efficient measure of quality instructional time, making it a better metric than teacher-to-student ratios (Headden, 2013).

Funding

Funding, for online programs in particular, continues to be a high level concern in most states, and is perhaps one of the most pressing issues (Watson & Gemin, 2009). Pressure for change in funding formulas comes from a variety of directions. Funding based on attendance and seat time requirements have been standing issues for full time virtual schools since their inception, for obvious reasons. Other concerns related to funding usually revolve around issues of boundaries and how funding is allocated and include:

- Enrollment areas can be quite large. In many cases, students who enroll in online schools are not restricted to district boundaries.
- Loss of district funding for students who transfer to an online school.
- District responsibility for funding a student that was not originally in the district such as homeschoolers who enroll in a virtual school.
- Double dipping when using enrollment as a basis for funding if students do not complete courses. Florida is the only state that funds students based on course completion and an end of course exam.
- The actual per pupil cost of attending a virtual school has yet to be determined.

More and more states are building flexibility into their funding formulas to address these issues, but they tend to be reactionary and are not long-term solutions. We see a wide variety of action across states from increased per student funding in Georgia, to attempts to decrease per student funding in Pennsylvania, Virginia, Kentucky, and Florida. However, according to the NEPC report (2013), no state has yet implemented a funding solution that links the actual costs of operating a virtual school with funding allocations.

Funding mechanisms of state supplemental programs also continues to be a high level concern in states where these types of programs exist. In response to pressure from outside providers, including private, for-profit organizations, Florida changed its existing system in which it compensated the state supplemental school, Florida Virtual School, with funds for students who enrolled in their courses from a separate, appropriated budget. In 2012, the state created

a single funding system for all online providers and now requires that they share in a prorated portion of funding with the home district in which a student is enrolled. This is a trend that is likely to continue.

Competency-Based Learning

If online has done nothing else, it has had the greatest influence on transformative instructional practices. When you remove seat time requirements, grade level designations, and learners can spend as much or as little time on content as they need or desire, pretty soon you come to a place where you realize that our outdated notions of school are just not an effective way to reach all learners. Unfortunately, on the whole, policy related to governance issues continues to reinforce an antiquated model of education through requirements for such things as place and pace based assessments, proficiency equated to grade level, and average GPA as a measure of mastery (Patrick & Sturgis, 2013; Worthen & Pace, 2014).

Despite policy barriers, pockets of innovation are beginning to spring up throughout the nation. For example, Oregon, perhaps the most innovative in terms of assessment, has adopted flexible assessment options including a longer testing window, adaptive assessment questions, and multiple testing opportunities for learners. New Hampshire has initiated a competency-based system to replace their seat time requirements, and along with Ohio and New York, implemented the development of performance-based assessments (Patrick & Sturgis, 2013; Worthen & Pace, 2014). Michigan has instituted a seat-time waiver and is exploring personalized learning options at the highest administrative level (Michigan Virtual University, 2012; U.S. Department of Education, n.d(b)). Maine has made great strides in moving towards a proficiency-based program going so far as legislating proficiency-based diplomas by 2017 and creating the *Collegiate Endorsement of Proficiency-Based Education and Graduation* which asks institutions of higher education to endorse and support their efforts to support college admissions for students from proficiency-based programs (Maine Department of Education, 2011; New England Secondary School Consortium, n.d.; Silvernail, Stump, Duina, & Gunn, 2013). These efforts are in their initial stages, but trends such as the performance-based Common Core assessments developed by PARCC and SBAC and the focus on College and Career Readiness point to a long awaited shift in national educational policy.

Teacher Preparation

Teacher preparation, qualifications, and effectiveness, which had primarily resided in the realm of state-level policy decisions, came under increased federal control with the highly qualified teacher requirements of the No Child Left Behind Act and continues today with efforts to

move to more outcome-based indicators of teacher preparation program quality. In 2013 the federal government unveiled a new policy framework for transforming teaching and leading, largely culled from the *RESPECT Project: A National Conversation about the Teaching Profession* (launched in 2012). As part of the Obama administrations' attempts to reauthorize ESEA, this initiative also encompasses grant-based funding projects like *Race to the Top* and the *Teacher Incentive Fund* (U.S. Department of Education, 2013). Although guidelines for promoting "connected educators" and professional learning communities exist in various policy frameworks, specifically in the 2010 National Educational Technology Plan, there is currently no federal requirement that differentiates between how mainstream teachers are prepared vs. those who teach online or in blended classrooms.

Although national standards and guidelines for quality online teaching exist (iNACOL, 2011), traditional preservice teacher preparation programs have been slow to respond to the increased demand for teachers with the specialized skills necessary to teach online. The onus for this has historically been left to the state, which determines through accreditation policies and resource allocation, what criteria have priority when evaluating teacher education programs. Few states have adopted teaching standards specifically addressing the competencies and skills an online teacher should possess. Even fewer require specialized training, endorsements, or certifications. Georgia and Idaho are the only two states with K-12 online teaching endorsements. Several other states have standards, suggested guidelines or recommendations including Michigan, Louisiana, South Carolina, South Dakota, Utah, and Vermont. Wisconsin enacted legislation in 2011 requiring 30 hours of professional development for online teachers, which was subsequently repealed in 2013. Minnesota enacted legislation in 2012 requiring state board approved teacher preparation programs include the knowledge and skills teachers must possess to deliver instruction in digital and blended learning environments. However, what specific knowledge and skills this might entail were left to interpretation as they were not included in the legislation (Archambault, Debruler, & Freidhoff, 2014).

Somewhat related to teacher preparation, is the notion of administrator preparation. This is a relatively new and emerging field but represents a rather important component in online and blended education. As of this writing there are no known policy directives requiring administrator preparation programs that specifically prepare online school or program administrators either to manage and evaluate online program effectiveness or to supervise or evaluate online teachers. Most online school administrators receive on-the-ground training.

One final policy concern related to online and blended learning is the ability and flexibility of teaching across state borders. Despite early calls for action, reciprocal licensing across state lines is still not a reality. Oklahoma is only one example of a state that allows teachers with licenses from other states (Watson & Gemin, 2009). Reciprocity agreements in many states still require that a teacher become licensed in the state in which they teach.

Conclusion

Early leaders set the stage for the current culture of U. S. educational policy, which included elements of local control, attempts by the federal government to ameliorate discriminatory practices, and increased access to quality educational opportunities for all learners. In the last decades of the 20th century, predominately after the writhing *A Nation at Risk* report, we saw more fervent and explicit federal involvement with policies aimed at improved academic achievement and accountability measures that were increasingly tied to federal funding. In the early 21st century, policies directed at technology-enabled learning and school choice drove the exponential growth in online education witnessed to date. The most recent policy enactments, exemplified by the No Child Left Behind Act and the Common Core National Standards, attempt to identify and standardize proficiency outcomes that better enable us to develop more consistent measures of academic achievement.

Arguably, one of the most disruptive influences on U.S. education systems has been the advent and proliferation of online learning for K-12 public schools (Christensen, 2008). Just a little more than a decade old, their influence on education reform has been remarkable. When teaching and learning moved online, it created an opportunity to question the timeworn structures driving classrooms today. Why do only students in affluent schools and districts have access to quality teachers? Why can't a student advance at a pace that is personalized to their individual characteristics? Why do we equate learning with seat-time? These questions along with advances in affordable technologies, advances in learning analytics, and the search for more affordable and efficient education options are the drivers of significant change in U.S. policy and representative of mainstream and emerging practices in U.S. education. Transformation is still in the early stages, by no means systemic, and with considerable challenges ahead, but there are ways that we can improve our chances of a successful transition to a 21st century model of school.

Institute transparent and consistent accountability measures across all educational modalities. Policies of accountability can add legitimacy to innovative programs (Searson, Wold, &

Jones, 2011), but they should be applied consistently and fairly. Policies that promote consistent accountability measures across all educational delivery modalities along with research that identifies best practice in different modalities are essential to understanding what makes a quality educational program, for whom and when, regardless of delivery method. Comparison studies, while informative, are not helpful in identifying those factors that lead to improved student outcomes. In addition, policy should reflect the growing importance of and demand for learning analytics. We should strive to establish basic protocols to protect student data, while educating the public on the power of learning analytics to personalize the educational experience of every child.

Put student learning first. As we have witnessed with online, and to some extent, blended models; learning is no longer bound by geographic and demographic borders. Nor is it bound by traditional school structures; discrete blocks of time allocated to learning, or grade level designations for example. Policies that promote equal access to quality educational opportunities such as school choice, flexible seat-time requirements, and competency-based education promote and put student learning front and center. We now have the ability to ensure that all students receive the type of educational experience they need, at the time they need it.

Value innovative and alternative educational delivery methods and learn from them. Thanks to the influence of competiveness we have witnessed increased differentiation and affordability options for both K-12 and higher education. Policies that allow for alternative funding models, reciprocal teaching certifications, and scalability models are essential in allowing innovation to thrive. In order to learn from the most successful programs, robust research priorities must be implemented and supported. And then we must be willing to take it a step further and bring those successful models to mainstream education. This is not an easy task with an entire industry and infrastructure built upon an assembly-line vision of education. The mainstream adoption of blended learning, the full implementation of the Common Core Standards, and the increasing availability of quality open source educational materials may provide a solution.

Prepare teachers and administrators for a digital age. Recognizing first, that all teachers and administrators will be faced with classrooms and school structures that look very different from those of the past, and that these transformative educational environments require a unique set of skills, is critical. State polices for teacher and administrator preparation should target programs in higher education and make technology enabled education a priority. Teacher preparation, which is almost non-existent for online teachers, would establish baseline skills and

knowledge (Rice & Dawley, 2009). Teacher prep programs should be held to a minimum set of standards for developing technology skills in pre-service teachers, including those skills necessary to teach in online environments (Kennedy & Archambault, 2012; Archambault, 2011). Schools of education must take a leadership role in establishing partnerships with innovative schools to develop a better understanding of how they function in order to establish appropriate and effective teaching practice and research protocols.

Some would argue that U. S. classrooms have not changed much since the days of the industrial revolution. For the most part, mainstream classrooms still revolve around a structured bell schedule, where learners are expected to learn the same content in the same amount of time during the same time each day. Despite the wide availability of information, the primary instructional strategy is direct instruction and lecture. However, this does not, by any means, convey the complete picture. Everyday, in hundreds or perhaps thousands of classrooms across the country, dynamic changes are occurring. Some of these changes are systemic; whole states, districts, and schools that advocate and implement sweeping change through legislative action and policy reform. Change is also manifested through grass roots acts of innovation and disruption by teachers who are not afraid to let students bring their own devices to class, who extend learning time outside of the classroom, who experiment with multiple delivery modalities and who themselves influence the evolution of educational policy. It is these localized efforts that most often push state or federal action.

The history and evolution of educational policy is fraught with reactionary political maneuvering and inconsistent and fragmented implementation. Sarason argues that in order to be successful, changes made within a system must be made with a comprehensive understanding of the whole system in which those changes are made (1993). In the end though, systemic change may be more a function of cultural change than anything else (Woodbury & Gess-Newsome, 2002). It is in establishing a new culture of education where we may find mainstream transformation both in classroom practice and in policy. Our culture of teaching and learning is a deeply embedded ideal, often defined by how we were taught – it is all we know after all. The Internet and technology have offered us an opportunity and ability, for the first time in recent history, to transform our cultural expectations and norms. New cultural ideas of open access to information, broadened professional and social networks, global communication and collaboration, transparency in news reports and government action, crowd-sourced problem solving and research – these are all new societal norms. But how do we translate this new culture to our classrooms today? Just as a society's culture shapes its policy, policy is one avenue that can shape and redefine culture. Policies can be implemented that reinforce our cultural priorities.

Creating a culture that values transparency and accountability, a culture that values student learning, a culture that values innovation and risk-taking, and a culture that values teacher and administrator preparation are all educational goals that can be realized through policy reform.

References

Archambault, L. (2011). The practitioner's perspective on teacher education: Preparing for the K-12 online classroom. *Journal of Technology and Teacher Education, 19*(1), 73-91.

Archambault, L., Debruler, K., & Freidhoff, J. R. (2014). K-12 online and blended teacher licensure: Striking a balance between policy and preparedness. *Journal of Technology and Teacher Education, 22*(1), 83-106.

Archambault, L., Kennedy, K., & Bender, S. (2013). Cyber-Truancy: Addressing Issues of Attendance in the Digital Age. *Journal Of Research On Technology In Education (International Society For Technology In Education), 46*(1), 1-28.

Christensen, C. M., Horn, M. B., & Staker, H. (2013). Is K-12 blended learning disruptive? An introduction to the theory of hybrids. San Mateo, CA: Clayton Christensen Institute for Disruptive Innovation. Retrieved from http://www.christenseninstitute.org/wp-content/uploads/2013/05/Is-K-12-Blended-Learning-Disruptive.pdf

Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns.* New York: McGraw-Hill.

Colorado Department of Education. (n.d.). Calculating and reporting attendance and truancy in online schools. Retrieved from http://www.cde.state.co.us/sites/default/files/documents/onlinelearning/download/ol_attendance_guidance.pdf

Council on Foreign Relations. (2012). *U. S. education reform and national security: Independent task for report no. 68*. New York: Author. Retrieved from: http://www.cfr.org/united-states/us-education-reform-national-security/p27618

Crow, M. M., & Silver, M. (2008). American education systems in a global context. Technology in Society, 30(2008), 279-291. Retrieved from http://president.asu.edu/sites/default/files/Technology_in_Society_052308_American_Education.pdf

Culp, K. M., Honey, M., & Mandinach, E. (2005). A retrospective on twenty years of education technology policy. *Journal of Educational Computing Research, 32*(3), 279-307. Retrieved from http://ocw.metu.edu.tr/file.php/118/Week12/Culp_JECR.pdf

Digital Learning Now. (2013). Digital Learning Report Card 2013. Retrieved from Digital Learning Now website: http://reportcard.digitallearningnow.com/#grade0

Freeland, J. (2014). How laws (and judges) comtemplate innovation. Clayton Christensen

Institute for Disruptive Innovation. Retrieved from: http://www.christenseninstitute.org/how-laws-and-judges-contemplate-innovation/

Glass, G. V., & Welner, K. G. (2011). Online K-12 schooling in the U.S.: Uncertain private ventures in need of public regulation. Boulder, CO: National Education Policy Center. Retrieved from http://nepc.colorado.edu/publication/online-k-12-schooling

Headdon, S. (2013, Feb.). An L.A. school succeeds with blended learning. Quick & ED. Retrieved from http://www.quickanded.com/2013/02/an-l-a-school-succeeds-with-blended-learning.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+TheQuickAndTheEd+%28The+Quick+and+the+Ed%29

Hentschke, G. C., & Wohlstetter P. (2007). *Conclusion: K-12 education in a broader privatization context. Educational Policy, 21*(1), 297-307. http://epx.sagepub.com.libproxy.boisestate.edu/content/21/1/297.full.pdf+html

Hirschland, M. J., & Steinmo, S. (2003). Correcting the record: Understanding the history of federal intervention and failure in securing U.S. educational reform. Educational Policy, 17, 343- http://epx.sagepub.com.libproxy.boisestate.edu/content/17/3/343.full.pdf+html

Hung, J. L., Hsu, Y. C., & Rice, K. (2012) *Integrating data mining in program evaluation of K-12 online education. Educational Technology and Society, 15*(3), 27-41.

International Association for K-12 Online Learning. (2011). *National standards for quality online teaching, Version 2*. Vienna VA: International Association for K-12 Online Learning. Retrieved from http://www.inacol.org/cms/wp- content/uploads/2013/02/inacoL_teachingstandardsv2.pdf

International Association for K-12 Online Learning. (2011). The onlinen learning definitions project. Vienna, VA: International Association for K-12 Online Learning. Retrieved from http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL_DefinitionsProject.pdf

Kennedy, K. & Archambault, L. (2012). Offering pre-service teachers field experiences in K-12 online learning: A national survey of teacher education programs. *Journal of Teacher Education, 63*(3), 185-200.

Mackenzie, J. C., (1894). The report of the committee of ten. *The School Review, 2*(3), 146-155. Retrieved from: http://www.jstor.org/stable/1074830

Maine Department of Education. (2011). Proficiency based diploma standards: Statute 4722-A. Retrieved from http://www.mainelegislature.org/legis/statutes/20-a/title20-asec4722-a.html

McBride, A. (2006). Landmark cases: Plessy vs. ferguson. *Public Broadcasting System: Supreme*

Court. Retrieved from: http://www.pbs.org/wnet/supremecourt/antebellum/landmark_plessy.html

McDonnell, L. M. (2012). Educational accountability and policy feedback. Educational Policy, 27(2), 170-189. DOI: 10.1177/0895904812465119

Michigan Virtual University. (2012). Moving Michigan farther, faster: Personalized learning and the transformation of learning in Michigan. Retrieved from http://www.crcmich.org/PUBLICAT/2010s/2013/PSC-CRC_Personalized_Learning_Report.pdf

Molnar, A. (2014). Virtual schools in the U.S. 2014: Politics, performance, policy, and research evidence. Boulder, CO: National Educational Policy Center. http://nepc.colorado.edu/files/virtual-2014-all-final.pdf

Nagel, D. (2014, March). ALEKS now eligible for STEM grant in Utah. The Journal. Retrieved from http://thejournal.com/articles/2014/03/17/aleks-now-eligible-for-stem-grant-in-utah.aspx

National Alliance for Public Charter Schools. (2014). The public charter schools dashboard: A comprehensive data resource from the National Alliance for Public Charter Schools. Washington D.C.: Author. Retrieved from http://dashboard.publiccharters.org/dashboard/policy/page/overview/year/2013

National Governors Association Center for Best Practices and Council of Chief State School Officers. (2012). *Common core state standards initiative: Implementing the common core state standards*. Retrieved from: http://www.corestandards.org/

New England Secondary School Consortium. (n.d.). Collegiate Endorsement of Proficiency-Based Education and Graduation. Retrieved from http://newenglandssc.org/resources/endorsements

Parry, M. (2011, July 10). Harvard researchers accused of breaching students' privacy. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Harvards-Privacy-Meltdown/128166/?sid=wb&utm_source=wb&utm_medium=en

Patrick, S., & Sturgis, C. (2013). Necessary for success: Building mastery of world-class skills: A state policymakers guide to competency education. Competency Works Issues Brief. Retrieved from http://www.competencyworks.org/wp-content/uploads/2013/02/inacol_cw_issuebrief_building_mastery_final.pdf

Phillips, V., & Wong, C. (2012). Teaching to the Common Core by design, not accident. Phi Delta Kappan, 93, 31-37.

Programme for International Student Assessment (PISA). (2012). Key findings. Retrieved from http://www.oecd.org/pisa/keyfindings/pisa-2012-results.htm

Rice, J. K., Huerta, L., Shafer, S. R., Barbour, M. K., Miron, G., Gulosino, C., Horvitz, B. (2014). Virtual schools in the U.S. 2014: Politics, performance, policy, and research. A.

Molnar (Ed.). Boulder, CO: National Educational Policy Center. Retrieved from: http://nepc.colorado.edu/publication/virtual-schools-annual-2014

Rice, K., Siemieniecki, D., Siemieniecka, B., & Kelly, P. (unpublished manuscript). Crossing borders: An Exploration of educational technology in the U. S. and Poland. Funded by Nicolaus Copernicus University, Torun Poland.

Rice, K. (2009). Priorities in K-12 distance education: a delphi study examining multiple perspectives on policy, practice, and research. *Journal of Educational Technology & Society,* 12, 3, 163–177.

Rice, K., & Dawley, L. (2009). The status of professional development for K-12 online teachers: Insights and implications. *Journal of Technology and Teacher Education, 17*(4), 523-545.

Rice, K. L. (2006). A comprehensive look at distance education in the K-12 context. *Journal of Research on Technology in Education, 38*(4), 425-448.

Roblyer, M. D. (2008). Virtual schools: Redefining "A place called school". In J. Voogt and G. Knezek (Eds.) *International Handbook of Information Technology in Primary and Secondary Education, 20*(695-711). U.S.: Springer. The Center for Educational Reform. (2014). Choice and Charter: Laws and legislation. Retrieved from: http://www.edreform.com/issues/choice-charter-schools/laws-legislation/ The White House. (n.d.). Race to the top. Retrieved from http://www.whitehouse.gov/issues/education/k-12/race-to-the-top

Sarason, S. B. (1993). *The predictable failure of educational reform: Can we change course before it's too late?* San Francisco, CA: Jossey-Bass.

Searson, M., Wold, K., & Jones, W. M. (2011). Editorial: Reimagining schools: The potential of virtual education. *British Journal of Educational Technology, 42*(3), 363-371.

Silvernail, D. L., Stump, E. K., Duina, A. A., & Gunn, L. M. (2013). Preliminary implementation of Maine's proficiency-based diploma program. Maine Education Policy Research Institute. Portland, Maine: University of Southern Maine. Retrieved from http://usm.maine.edu/sites/default/files/cepare/SBE%20Report.pdf

Stoddard, C., & Corcoran, S. P. (2008). Charter politics: Why some places have more students in charter schools and others have fewer. *Education Next.* Retrieved from: http://educationnext.org/charter-politics/

U.S. Department of Education. (n.d.). Science, Technology, Engineering and Math: Education for Global Leadership. Retrieved from http://www.ed.gov/stem

U.S. Department of Education. (1958). National Defense Education Act (NDEA). *National Archives Online Public Access*. Retrieved from: http://research.archives.gov/description/299869

U.S. Department of Education. (1965) Elementary and Secondary Education Act (ESEA):

Retrieved from: http://www2.ed.gov/policy/elsec/leg/esea02/beginning.html and http://en.wikipedia.org/wiki/Elementary_and_Secondary_Education_Act

U.S. Department of Education. (1972). Title I: Improving the academic achievement of the disadvantaged. *State of Washington, Office of the Superintendent of Public Instruction.* Retrieved from: http://www.k12.wa.us/ESEA/Programs.aspx

U.S. Department of Education. (1983). *A nation at risk: The imperative for educational reform.* Washington D. C.: National Commission on Excellence in Education. Available: http://www2.ed.gov/pubs/NatAtRisk/index.html

U.S. Department of Education. (1992). Title IX and sex discrimination. *Office for Civil Rights.* Retrieved from: http://www2.ed.gov/about/offices/list/ocr/docs/tix_dis.html

U.S. Department of Education. (1994). Improving America's Schools Act of 1994. Washington, D.C.: ?? Retrieved from: http://www2.ed.gov/legislation/ESEA/toc.html

U.S. Department of Education. (1994). Goals 2000: Educate America Act. Washington, D.C.: ?? Retrieved from: http://www2.ed.gov/legislation/GOALS2000/TheAct/index.html

U.S. Department of Education. (1996). *Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge.* Washington D.C: Office of Educational Technology. Retrieved from: http://www2.ed.gov/about/offices/list/os/technology/plan/national/index.html?exp=3

U.S. Department of Education. (2001). *The No Child Left Behind Act of 2001: Public Law 107-110*. Washington D.C.: ?? Retrieved from: http://www2.ed.gov/policy/elsec/leg/esea02/index.html

U.S. Department of Education. (2001). *E-learning: Putting a World Class Education at the Fingertips of All Children.* Washington D.C: Office of Educational Technology. Retrieved from: http://www2.ed.gov/about/offices/list/os/technology/reports/e-learning.pdf

U.S. Department of Education. (2004). *Toward a New Golden Age in American Education: How the Internet, the Law and Today's Students are Revolutionizing Expectations.* Washington D.C: Office of Educational Technology. Retrieved from: http://www2.ed.gov/about/offices/list/os/technology/plan/2004/index.html?exp=3

U.S. Department of Education. (2004). *Individuals with Disabilities Education Act (IDEA)*. Washington D.C.: Special Education and Rehabilitative Services. Retrieved from: http://www2.ed.gov/policy/speced/guid/idea/idea2004.html

U.S. Department of Education. (2010a). *Transforming American Education: Learning Powered by Technology*. Washington D.C: Office of Educational Technology. Retrieved from: http://www.ed.gov/technology/netp-2010

U.S. Department of Education. (2010b). *A blueprint for reform: The reauthorization of the*

elementary and secondary education act. Washington D.C.: Office of Planning Evaluation and Policy Development. Retrieved from: http://www.ed.gov/esea

U.S. Department of Education. (2012). Enhancing teaching and learning through educational data mining and learning analytics: An issues brief. Washington, D.C.: Office of Educational Technology. Retrieved from http://www.ed.gov/edblogs/technology/files/2012/03/edm-la-brief.pdf

U.S. Department of Education. (2013). ConnectED Initiative. Washington D. C.: Office of Educational Technology. Retrieved from http://www.ed.gov/edblogs/technology/connected/

U.S. Department of Education. (2013b). A blueprint for R.E.S.P.E.C.T. Recognizing educational success, professional excellence and collaboration. Retrieved from http://www2.ed.gov/documents/respect/blueprint-for-respect.pdf

U.S. Department of Education. (n.d. (a)). Family educational rights and privacy act. Retrieved from http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html

U.S. Department of Education. (n.d. (b)). Competency-based learning or personalized learning. Retrieved from http://www.ed.gov/oii-news/competency-based-learning-or-personalized-learning

VHS, Inc. (2002). VHS, Inc. annual report: Innovation education online. Retrieved from http://thevhscollaborative.org/sites/default/files/AR.VHS_.final_.pdf

Watson, J., & Gemin, B. (2009). Promising practices in online learning: Policy and funding frameworks for online learning. Washington, D.C.: International Association for K-12 Online Learning. Retrieved from: http://www.inacol.org/cms/wp-content/uploads/2012/09/NACOL_PP-FundPolicy-lr.pdf

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2013). Keeping pace with K-12 online & blended learning: An annual review of policy and practice. Durango, CO: Evergreen Education Group. Retrieved from http://kpk12.com/cms/wp-content/uploads/EEG_KP2013-lr.pdf

Web-based Education Commission. (2000). *The power of the Internet for learning: Moving from promise to practice.* Website name?? Retrieved from: http://interact.hpcnet.org/webcommission/index.htm

Woodbury, S., Gess-Newsome, J. (2002). Overcoming the paradox of change without difference: A model of change in the arena of fundamental school reform. *Educational Policy, 16,* 763-
http://epx.sagepub.com.libproxy.boisestate.edu/content/16/5/763.full.pdf+html

Worthen, M., & Pace, L. (2014). A K-12 federal policy framework for competency education: Building capacity for systems change. A Competency-Works Issues Brief. Washington,

D.C.: International Association for K-12 Online Learning. Available: http://www.competencyworks.org/wp-content/uploads/2014/01/CompetencyWorks_A_K-12_Federal_Policy_Framework_for_Competency_Education_February_2014.pdf