Creative Destruction and Globalization: The Rise of Massive Standardized Education Platforms

Jerald M. Liss
Emporia State University

Jerald M. Liss, Assistant Professor of Special Education, Dept. of Elementary Ed/Early Childhood/Special Ed., Emporia State University, Campus Box 4037, 1200 Commercial St., Emporia, KS 66801, jliss@emporia.edu

Jerald M. Liss is an Assistant Professor of Special Education at Emporia State University, Emporia, KS, USA. His research and teaching interests focus on teacher preparation.
Abstract

This paper described how massive standardized education platforms have emerged as a result of globalization and the process of creative destruction. In education, creative destruction involves the initial development of a large number of educational standards, followed by cycles of the destruction of old standards and the creation of new ones. This leads to the narrowing and refinement of the standards until the key element of interoperability is achieved, thus allowing individuals or organizations to interact on a large scale. Examples were presented of standardized education platforms in the United States and globally.

While the objective and subjective knowledge systems are represented in the field of education, one danger is the standardized platforms may become homogenized around only the objective knowledge system, which seeks perfect efficiency. This may result in the exclusion of the subjective knowledge system, which argues diversity and heterogeneity are needed to produce educational creativity and innovation. On the other hand, the platforms may be able to deliver much needed financial efficiency for K – 12 public education systems as well as providing a connection between the research data which remains isolated in universities, but is needed by practitioners in K – 12 settings.

Keywords: Globalization, creative destruction, standards, interoperability, platforms, education knowledge systems
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One way to understand how globalization functions is to examine Schumpeter’s concept of “creative destruction” (Schumpeter, 2008/1942). Within the context of discussing capitalism, Schumpeter described creative destruction as the continual process of destroying the old economic structures and creating new ones, and this occurs because capitalism “can never be stationary” (p. 82). Moreover, “this process of Creative Destruction is the essential fact about capitalism” (p. 83). Foster and Kaplan (2001) have researched creative destruction and found not only is it the driving force behind the changes experienced by corporations and businesses across the world, but also it is now moving at an incredibly fast pace, probably much faster than Schumpeter himself would have imagined.

Thomas Friedman (2000) defined creative destruction as follows: “. . . the perpetual cycle of destroying the old and less efficient product or service and replacing it with new, more efficient ones” (p. 11). According to Friedman, this concept is at the heart of globalization as it describes the endless search for more efficient products, services, or ideas. To accomplish this, globalization forces governments, corporations, and individuals to destroy old products, services, and ideas to create new and better ones to survive in the global market-place. While some may think creative destruction applies only to businesses and corporations, it operates in the area of education, too.

The purpose of this paper is to inform educational researchers, administrators, and practitioners about the rise of massive standardized education platforms in the United States and across the world. The platforms have emerged because of widespread
standardization which allows for the key element of interoperability. First, I discuss
standardized platforms. Next, I discuss the origins of standardized education platforms
and the role played by creative destruction. Then, I review examples of massive
standardized education platforms that have emerged. Last, I conclude with a discussion of
the negative and positive implications of these platforms.

**Standardized Platforms: An Introduction**

The current global era began in the 1980s with the computer and communication
revolutions, followed by the information revolution which was led by the emergence of
the Internet in the 1990s (Friedman, 2005). The Internet came about because an
interoperable system was made possible through the development of a standardized
computing platform. This was followed by another development that truly made the
world interconnected, and it occurred in the mid-1990s with the move from a complex
computing platform to a user-friendly computing platform: specifically, the Internet
browser named Netscape. As Friedman wrote: “Netscape went public on August 9, 1995,
and the world has not been the same since” (2005, p. 56).

At this point, it bears repeating the Internet revolution occurred because of the
development of a standardized computing platform. Through the use of uniform world-
wide standards, a platform was built allowing people to use computers across the world
to connect and interact. Importantly, this development required a wide array of different
technologies to conform to a uniform set of standards allowing all of the fragmented
technologies to connect and interact—literally, to become one interoperable global
platform.
In this paper, a platform is defined as a base built around a uniform set of standards which allows for interoperability. Platforms can be of many sizes, but the focus of this paper is on large ones which allow many individuals or institutions to interact. The importance of the platforms is determined by how usable—or how interoperable—they are for users. The greater the interoperability, the more powerful the platform becomes because less efficient platforms will be destroyed by it. The new platform is better—or more powerful at any rate—because it reaches even more users or institutions.

**The Origins of Standardized Education Platforms: The Implementation of Creative Destruction**

In the world of education, a multitude of standards have been developed by governments and organizations around the globe. But some educators have realized, through the staggering growth of standards, how their sheer proliferation has caused them to become too confusing and overwhelming. Educational researchers, for example, have argued the number of standards and the content within standards must be cut dramatically if they are to be used effectively (Scherer, 2001). Indeed, reports have called for the “narrowing” or “focusing” or “tightening” of standards. Both the National Council of Teachers of Mathematics and the National Research Council, which work on developing standards, recommended an approach focusing on a narrower number of standards per grade level, with an emphasis on identifying only the most significant standards (Olson, 2006).

With regard to reducing the number of state standards in the United States, Popham stated (2006):
Although it’s easy to snipe at a state’s accountability tests or revile the federal legislation that spawned those tests, the true culprits in our current education calamity are states’ official content standards, that is, the skills and bodies of knowledge that a state’s students are all supposed to learn. Most states have far too many content standards. Moreover, they are poorly conceptualized either for teaching or testing. (Popham, 2006, p. 87)

Then consider Popham’s solution:

What’s to be done about this sorry state of affairs? The only way out of this maze is to overhaul a state’s content standards so they represent curricular aims that teachers can truly teach in the instructional time available and that they can assess in a way that pays off instructionally. Several states have recently been flirting with the idea of using a smaller number of broader “power standards.” (Popham, 2006, p. 88)

Popham’s discussions exemplify how the process of creative destruction was at work with regard to the overwhelming number of standards. What eventually was “created” was the Common Core State Standards Initiative in the United States (Gewertz, 2012). At this time, all but four states have adopted the Common Core standards, which have narrowed down the vast number of standards to a smaller set which will be adhered to throughout the United States. This initiative, sponsored by the National Governors Association and the Council of Chief State School Officers, looked not only to exemplary states within the United States for guidance, but deliberately examined the standards in a host of other countries to determine what should be created.

*Standardized Education Platforms*
While a K–12 global standardized education platform does not yet exist, the new era of globalization has already ushered in several large scale standardized education platforms. Indeed, educational e-Learning platforms are already being examined for their effectiveness and efficiency (Karakos, Kazanidis, Kontogiannis, & Valsamidis, 2011). The International Organization for Standardization (ISO) has been developing international standards for education in the field of e-Learning (ISO, 2006). Having this happen in the area of e-Learning becomes understandable when considering in the United States alone, “over 6.1 million students were taking at least one online course during the fall 2010 term” in degree granting postsecondary institutions (Allen & Seamen, 2011, p. 4). This number is up from 1.6 million in 2002. Moreover, while online enrollment reflected 9.6% of total postsecondary enrollment in 2002, it comprised 31.3% of total enrollment in 2010 (Allen & Seamen, 2011).

At the international level, the Sharable Content Object Reference Model (SCORM) is a standard for e-Learning platforms. SCORM was developed by the Advanced Distributed Learning (ADL) initiative from the United States Department of Defense (Rosenberg, 2011). It is a platform developed by using a select set of standards from many areas including the Institute of Electrical and Electronics Engineers (IEEE) and the IMS Global Learning Consortium, (Lambert, 2007). SCORM is the platform providing the interoperability standards for any institution or company to use to operate and deliver e-Learning courses or services. SCORM was first released in 1999, and has been updated with many new editions over the years. The development of SCORM, with its key element of interoperability, created an explosion in e-Learning courses and services. This occurred because institutions such as universities or private companies
could make their e-Learning platforms, commonly called learning management systems (LMSs), conform to the SCORM standards, and by doing so, they gained interoperability with other e-Learning platforms across the world (Lambert, 2007).

Nonetheless, the process of creative destruction is never stationary. While the new editions of SCORM have provided flexibility for emerging course designs, other advances are developing so rapidly they are moving beyond what the SCORM standards allow. “Today, smart designers and e-Learning specialists, and ADL itself, recognize the need to go beyond SCORM” (Rosenberg, 2011).

For an example of an emerging platform at the postsecondary level in the United States, the California State University system, with 23 campuses and over 400,000 students, is placing all of its online course offerings into one platform: Pearson’s cloud-based LearningSystem (Bates, 2012). This platform is scheduled to begin in January 2013. Bates has discussed advantages including it will avoid duplication of courses across campuses, thus providing for economic advantages when delivered on a scale as large as this system. Additionally, students will be able to take courses offered from any California State University campus because the new platform will centralize services, making them interoperable. On the other hand, the process of delivering online courses will be turned over to Pearson leading to questions about the future of the California State University system regarding research and development for online technology. In other words, will Pearson benefit more than California State over the long run with regard to online technology.

With online enrollment surging in universities across the world (Maslen, 2012; Zappei, 2012), another development has emerged. Millions of students are taking
MOOCs or massive open online courses. This includes MOOCs from Harvard, MIT, and Stanford. First, it could be argued that a MOOC itself is a standardized platform allowing thousands or hundreds of thousands of students to take a course. But another platform has emerged for MOOCS. Two Stanford professors, Daphne Koller and Andrew Ng:

... have founded a startup called Coursera (http://www.coursera.org), another platform on which seventeen colleges and universities—at the current count and including Coursera’s four original partners (Princeton, the University of Michigan, the University of Pennsylvania, and Stanford)—offer their courses in a massive online setting. (Watters, 2012, p. 60)

Since MOOCs are already here, the question now is what type of new standardized platforms will emerge around them (Carey, 2012). For instance, a critical issue now surrounding MOOCs is how to offer course credit. This is a new frontier as Colorado State University is the first American university to begin offering credit for a MOOC, and only a few European universities have begun doing so (Lewin, 2012).

The issue of course credit for MOOCs is a challenge because the matter of how to control for cheating must be addressed. Nonetheless, Harvard and MIT are moving forward with a procedure where students enrolled in their MOOCs can take proctored tests through Pearson VUE centers, which are located around the world. At this time, there are 450 Pearson VUE testing centers in over 110 countries (Lewin, 2012). This platform will very likely be standardized around a process for verifying student identities on examinations so they can receive university credits for MOOCs. Moreover, this platform will open the door for other universities to accept MOOCs for transfer credit (Carey, 2012).
While postsecondary education is experiencing the development of massive standardized platforms, this is occurring at the K – 12 level, too. For example, at the K - 12 level in the United States, many school districts are now requiring students to take online courses, typically a minimum of one online course, before graduating from high school. Some states are even enacting laws requiring school districts to allow options of multiple online course providers so students have choices (Davis, 2012), and vendors are stepping forward to provide the options. For instance, over 30 vendors are seeking approval to provide online courses in Louisiana (Robelen, 2012).

This is leading to many changes for K – 12 online education including: (a) students or their parents can seek online course options from other school districts, (b) some school districts are forming coalitions with other school districts to provide online courses, (c) vendors are gearing up to provide online K – 12 courses, and (d) the school districts themselves are beginning to recruit students to take their online courses. These trends are expected to continue as the number of American K – 12 students taking online courses is expected to increase dramatically (Flanigan, 2012). As of 2009, it was estimated that slightly over one million K – 12 students were enrolled in at least one online or hybrid course, and “70 percent of the students were enrolled at the secondary level” (Picciano & Seaman, 2010, p. 5).

Another development is that some states are moving toward licensure or endorsement requirements for teachers of K - 12 online courses (Flanigan, 2012). For example, the Hawaii Teacher Standards Board is considering whether to require a separate stand-alone online teaching license or an online teaching endorsement to be added to a traditional teaching license. States are aligning their online teaching standards
with the National Educational Technology Standards. These standards, in turn, are “set by the International Society for Technology in Education” (Flanigan, 2012, p. S10). With the rapid emergence of online courses in K – 12 education in the United States, one question arising from these developments is how long will it take before a standardized platform emerges allowing K – 12 students to take online courses from countries across the world.

Another example, in the area of teacher education, is a nation-wide standardized education platform built in the United States. The National Council for Accreditation of Teacher Education (NCATE) reached an agreement with the Educational Testing Service (ETS) to align the teaching profession’s standards with a new ETS examination, the Praxis II (NCATE, 2006). The Praxis II is now widely used in many states as one component of teacher certification or licensure.

To show the breadth of how this standardized platform developed, NCATE had an entire list of organizations participating in the integration of standards into the new ETS Praxis II tests. The list of organizations included the International Reading Association, the National Association of School Psychologists, the Council of Chief State School Officers, the American Association of Colleges for Teacher Education, the National Council for the Social Studies, the National Council of Teachers of English, the National Science Teachers Association, the National Council of Teachers of Mathematics, and the Council for Exceptional Children. These organizations comprise a Who’s Who list of the leading education organizations within the United States, and they participated in the creation of a single uniform system—a standardized education platform—for the preparation of teachers.
In yet another example of the process of creative destruction, NCATE itself merged with the other existing teacher accreditation organization, the Teacher Education Accreditation Council (TEAC) to form the Council for Accreditation of Educator Preparation (CAEP). The merger was approved by the governing boards of both organizations on October 22, 2010 (Sawchuk, 2010). This merger now presents a unified system for the accreditation of teacher preparation programs. This means that nearly 900 teacher preparation programs are now reviewed by one accrediting organization. Critically, however, the merger of the two organizations required alignment to a common set of accreditation standards to achieve interoperability. Thus, the American teacher preparation accreditation platform becomes not only larger, but also standardized, making it one interoperable system across the United States.

Another example of a nation-wide standardized education platform built in the United States is a massive national database called the Education Data Exchange Network (EDEN), which receives information from states with regard to NCLB and other accountability requirements (Trotter, 2006). The U.S. Department of Education led the development of standards creating integrated and interoperable data systems to enable information to flow from the states to EDEN, the federal data platform.

The uniformity of this national data platform was developed through the use of an underlying standardized education data platform (recall that an underlying standardized computing platform first had to be built to create the infrastructure needed to launch the Netscape browser). This standardized education data platform was constructed using the Schools Interoperability Framework (SIF), which has a set of specifications (or standards) allowing school and student information to be transferred among state,
national, and corporate databases (Trotter, 2006). Consequently, a massive standardized education data platform has been in place for years now.

Through the process of creative destruction, the EDEN system has continued to expand and is now known as EDFacts (Ahearn, 2007). Additionally, what began on a volunteer basis is now regulated. “While submission of data through the EDFacts system began as a voluntary process, a new federal regulation became effective on January 25, 2007 that requires states to submit data reports to EDFacts . . .” (Ahearn, 2007, p. 2). EDFacts regulations and reports are controlled by the federal government (U. S. Department of Education, 2012), and the system continues to collect data about K – 12 schools for all 50 American states.

While the previous examples were within the United States, the following examples are of international standardized education platforms. Organizations from the United States, including ACT Incorporated, the Educational Testing Service, and CTB-McGraw Hill, have been rapidly expanding overseas in the areas of K-12 education and higher education (Zehr, 2006). This expansion into the international arena is built upon standards-based reform measures and standardized tests. The result is the emergence of a global standardized education platform driven by three factors.

First, heightened attention is being given to standards and accountability measures by global education funding agencies, including “the World Bank, the U.S. Agency for International Development, and the United Nations Educational, Scientific, and Cultural Organization, or UNESCO” (Zehr, 2006, p. 10). With regard to funding, Stiglitz (2003) and Sahlberg (2011) have discussed how the influence of global funding agencies can determine the decision-making in countries, particularly developing countries. If global funding agencies offer monies for specific policies, many countries find it difficult to
refuse the funding. The catch, however, is the countries must follow the policies dictated by the global funding agencies, and in this case, these are policies in support of standards-based education reform measures. These steps, of course may lead to standardized education platforms.

Second, some countries are voluntarily implementing policies to change their primary and secondary educational systems with the goal of making their students more competitive in the global marketplace. Critically, however, these countries, such as Qatar, are using American testing organizations to develop standards-based assessments as the means of driving change in their schools (Zehr, 2006). This is introducing more uniformity globally across elementary and secondary educational systems through the mechanism of standards, which again, may lead to standardized education platforms.

Third, there is currently a much greater movement of students across countries to attend colleges and universities. It has been predicted, between 2000 and 2025 the number of students enrolled in higher education will expand from 97 million in 2000 to over 260 million by 2025, accompanied by a 400% increase in the number of students enrolled in colleges and universities outside their home countries (Ruby, 2006). Because of this global movement of students, there is a greater need “to legitimize their academic records with standardized tests, such as the SAT or ACT” (Zehr, 2006, p. 10). Consequently, test makers and some foreign countries are seeking to develop a single uniform platform for the college admissions process, one that will be a truly global system. This is to be accomplished through the use of standardized assessments, such as the SAT or the ACT, to be used throughout the world.
A further examination of this emerging global college admissions platform reveals it is driving the uniform usage of the English language (Zehr, 2006). To repeat an earlier point, a standardized platform requires conformity to a uniform set of standards so all of the components can connect and interact, thus allowing interoperability. ACT Incorporated is now delivering a course called the Global Assessment Certificate Program in 13 countries to prepare non-English-speaking foreign students to attend colleges or universities in English speaking countries, and the Educational Testing Service is marketing the Test of English for International Communication in over a dozen countries, including Germany, France, the Netherlands, Poland, Jordan, China, Spain, South Korea, Singapore, and India (Zehr, 2006). In summation, another standardized education platform has formed—a global standardized college admissions testing platform using the language of English and standardized admissions tests to achieve the key element of interoperability.

While the previous examples were driven by the standards-based reform movement, another movement has emerged focusing on protecting students who are attending higher education institutions in other countries. The OECD (Organisation for Economic Co-operation and Development) and UNESCO (United Nations Educational, Scientific, and Cultural Organization) have developed a set of guidelines for the thirty-four OECD countries to follow regarding the delivery of higher education services to international students. These are called the Guidelines for Quality Provision in Cross-Border Higher Education (Vincent-Lancrin & Pfotenhauer, 2012). These guidelines provide a framework or platform for OECD countries as well as other countries to follow. The following describes the need for this type of platform.
Furthermore, the lack of comprehensive frameworks for co-ordinating various initiatives at the international level, together with the diversity and unevenness of the quality assurance and accreditation systems at the national level, create gaps in the quality assurance of cross-border higher education, leaving some cross-border higher education provision outside any framework of quality assurance and accreditation. This makes students and other stakeholders more vulnerable to low-quality provision and disreputable providers (also called “degree mills”) of cross-border higher education. (Vincent-Lancrin & Pfotenhauer, 2012, p. 8)

Thus, the Guidelines address the need to provide quality assurance and accreditation indicators not only for the benefit of international students, but also to provide a common framework to be used by countries and higher education institutions.

The final example discussed in this section examines the Programme for International Student Assessment (PISA) which is an international exam administered every three years to 15-year-olds in the areas of mathematics, reading, and science. This assessment was originally developed for OECD countries, which now includes 34 nations, but it has become an even larger platform as 65 countries participated in PISA in 2009 (Zhao, 2012). Critically, PISA is now seen by some as a global standard for making international comparisons of school system performance (Breakspear, 2012; Sahlberg, 2011). More significant, however, is how the PISA results have begun to affect educational policies in many countries. For example, Germany (Ertl, 2006), Denmark (Egelund, 2008), and Japan (Takayama, 2008) enacted significant policy changes following what were considered poor PISA scores by students.
Sahlberg (2011) noted, “In most of the more than 65 participating education systems, PISA is a significant source of education policy development and the reason for many large-scale education reforms” (p. 55). More specifically, PISA results are impacting the national policies of many countries at the normative level which involves assessments and standards. The OECD sponsored a study to examine the policy impact of PISA on countries’ normative policies (Breakspear, 2012). With regard to the PISA standards and the standards used by countries, one country (Japan) reported the two were extremely aligned, 19 countries reported they were very aligned, and 15 reported they were moderately aligned. Breakspear concluded “the findings provide preliminary evidence that PISA is being used and integrated within national/federal policies and practices of assessment and evaluation, curriculum standards and performance targets” (2012, p. 27).

This means PISA is not only an international evaluation used for comparison purposes, but it is leading many countries to change their policies to conform to the PISA exam. Indeed, the alignment of standards by many countries to PISA standards signals the emergence of another massive standardized platform at the international level. Again, a standardized platform emerges when a large set of standards become narrowed down to a smaller set of uniform standards allowing for interoperability. At this time, evidence is showing the national standards of many countries are becoming uniform around the requirements for mathematics, reading, and science as set by PISA.

Furthermore, a report from the OECD has made connections between students’ cognitive skills and how well a country’s economy performs (Robelen, 2010). That is, increases in students’ cognitive skills are being connected to increases in a country’s
gross domestic product (GDP). The gains in students’ cognitive skills are being measured by how well students do on the PISA, and then economic modeling is used to assess the impact on economic growth. A 25 point increase in PISA scores over 20 years would have a dramatic effect on a country’s GDP. For example, “the United States, with a current annual GDP of more than $14 trillion would see growth of nearly $41 trillion in GDP over 80 years, with a 25-point gain achieved within the next 20 years” (Robelen, 2010, p. 6). The PISA platform, then, does not merely serve as an instrument to compare school system performance on an international level; instead, it is a platform ultimately based on a major economic rationale regarding how countries perform in the global marketplace.

**The Implications of Standardized Education Platforms**

With massive standardized education platforms emerging nearly everywhere, one question looms: what does this all mean? One concern is the forces of globalization will cause knowledge systems to conform to the point where they may become homogenized around one dominant philosophy of education (Lawson, 2000). For the purpose of this paper, I will identify two broad knowledge systems within education. These are the objective and the subjective (Fullan, 2001), and I will use the work of Skrtic (1995) to discuss these two systems.

Skrtic examined the two broad knowledge systems by applying theoretical organization analysis to education. Within this approach, schools are organizations. The objective knowledge system sees schools as orderly and rational organizations. The goals are to achieve efficiency and to maintain order to produce certainty (Skrtic, 1991). When the objective knowledge system operates within schools, it is premised on standardization
with the goal of “perfecting the practices they have been standardized to perform” (Skrtic, 1995, p. 202). Change within an objective organization, including schools, is achieved by adding standards or by “restandardizing” the work processes (p. 202). In this way, a rational and orderly progression is achieved. The staff members within a school thus have a prescribed set of standards used to meet the needs of students. This provides stability and certainty to a school, with the goal of perfecting the standardized methods for maximum efficiency.

On the other hand, the subjective knowledge system is represented by a non-rational perspective that sees uncertainty as necessary for producing growth of new knowledge (Skrtic, 1991). The goals include a democratic educational system based on excellence and equity as well as the development of innovations. In the subjective knowledge system, the “professionals know the theory behind their work and have the discretion to adapt it to the actual needs of their clients” (Skrtic, 1991, p. 163). The subjective approach acknowledges the importance of heterogeneity and diversity, and promotes a problem-solving approach to meet the needs of diverse students versus a prescribed standardized one. Also, it is driven by the values of excellence and equity in education which requires a problem-solving approach to produce the innovations needed to provide for students whose needs are not met by prescribed standardized practices. Consequently, student diversity “is an asset, an enduring uncertainty, and thus the driving force behind innovation, growth of knowledge, and progress” (1991, p. 177).

Some have raised concerns the process of globalization will create standardized education platforms that are homogenous representations of only the objective knowledge system. For instance, one danger according to Dryzek (1996), is how globalization
spreads an insidious form of economic rationality. This type of rationality occurs when
democratic collectivism is abandoned and is replaced by individualism. As such,
individuals use a rational approach which involves calculating how to achieve their
personal interests and desires without regard for the larger democratic collective. Dryzek
asserts the “penetration of economic rationality into the political behavior of individuals
devastates democratic politics” (p. 13). Similarly, Burch (2009) has written of the
dangers of the privatization of education in the United States. Specifically, there is
neoliberal trend which has influenced political thought into believing the private sector
can do a better and more efficient job with education than can the government.
Consequently, many government policies, such as NCLB in the United States, are
encouraging education privatization.

Additionally, Zhao (2009) argues the current direction of American education
toward standardization and centralization is dangerously misguided. He bases his
argument upon how the United States is currently seeking what China has had in place
for centuries, but now China is seeking to emulate the American education system
because it wants to transform from a labor-based society to a knowledge-based one. Zhao
argues the United States is currently changing to an education system based on
accountability, centralization, and standardization which will produce a homogenization
of talent around only core standardized academic subjects. This relentless focus on
achieving high academic test scores on standardized assessments produces good labor
workers, but not citizens capable of higher levels of creativity and innovation required for
a global world. Instead, according to Zhao, what is needed is a focus on more local
autonomy, developing a wide diversity of talent, and encouraging a spirit of
individualism which fosters creativity and innovation. Indeed, Zhao argues, this is what has made the United States the world leader in patents, inventions, entrepreneurial achievements, and top-ranked universities.

Others have made arguments similar to Zhao’s. For example, Darling-Hammond has studied the school system in Finland, which consistently ranks first or near the top on PISA scores for reading, mathematics, and science (Darling-Hammond, 2009). But Darling-Hammond points out how Finland has accomplished not only high PISA scores, but also a highly equitable school system by implementing changes that have been “the reverse of the progression of policies in the United States” (p. 18). Additionally, Sahlberg (2011) has examined a set of global education reforms implemented by many countries which are very different than Finland’s approach. While Finland provides a great deal of autonomy to local schools and teachers while using very few standards, many other countries are using heavy curriculum standardization with a focus on only core academic subjects, as well as using high-stakes accountability measures that can punish schools and teachers.

While the countries using these global education reform measures place a high emphasis on test results, others are warning this testing emphasis is misguided. Wei and Eisenhart (2012) report how American children perform significantly worse on international math tests when compared to Taiwanese children, who excel on them. Later in life, however, American researchers and scientists achieve far beyond their Taiwanese counterparts in critically important areas such as number of patents and Nobel prizes. The reason appears to be a Taiwanese system focusing on standardized computational drills with the aim of preparing students to excel on math tests. The focus is on finding the
correct answers on math tests rather than on higher-level thinking that fosters mathematical creativity and innovation.

The concern is whether standardized education platforms will focus on developing perfect educational efficiency which represents only the objective knowledge system (Skrtic, 1995). Without the appropriate representation of the subjective knowledge system, deviations standing in the way of a perfectly efficient system would not be included in standardized education platforms because they would not conform to the uniformity specifications. Examples of deviations would include student diversity, courses other than core academic subjects, at-risk students, students with disabilities, teacher autonomy, and inefficient schools as measured by standards-based reform accountability systems. All of these “deviations” would be rejected as undesirable—or inefficient—departures from the norm because they are obstacles to the key element of interoperability. But these very deviations are seen by others, such as Skrtic and Zhao, as providing the essential qualities of diversity and creativity which are the keys to educational growth and innovation.

On the other hand, there is much to be said for achieving efficiency. In 2004, the largest school districts in the United States agreed to form an organization called the Council of the Great City Schools (Casserly, 2011). The goal was to make the school districts financially efficient through the development of an interoperable data platform. The Key Performance Indicator (KPI) system now allows each of the nation’s largest urban school districts to compare, at high levels of detail, the performance of business operations, finance, human resources, and information technology across all 65 of the largest urban school districts in the nation. District leaders can
calibrate comparisons based on geography, cost of living, union status, and hundreds of other variables, and use dynamic data modeling to instantly calculate the effect of potential changes to the bottom line. (Casserly, 2011, p. 46)

This is a standardized education platform built for America’s 65 largest urban school districts focused on finances. After the economic downturn of the America economy in 2008, this type of efficiency may be needed not only to keep public schools open, but operating with a full staff of trained educators.

Additionally, Levin (2012) has stated the Internet provides an opportunity for practitioners, including principals and teachers, to learn about research. He cites the past challenges K - 12 schools have had in using research effectively. He argues, however, that “efforts to improve research dissemination by training individuals won’t be effective unless they’re supported by appropriate organizational systems” (2012, p. 73). He points out how schools “aren’t organized to find, assess, share, and use research . . . and few national governments support this kind of knowledge dissemination” (p. 73). What Levin may not realize is how he is predicting the development of another standardized education platform designed to disseminate research for K -12 practitioners.

There likely will be many starts and stops along the way, but the process of creative destruction will create a standardized education platform upon which a research dissemination organization or set of services can be built. Keller (2011) has identified how there are far too many silos of university library-based data which cannot be easily accessed by users. He points out how much of the data contained in university libraries remain “distant from the World Wide Web” (p. 10). For example, search engines such as Google and others do not index much of the data stored in university libraries, which
means a great amount of information, such as research-based data, is not easily accessed by users. This, of course, reveals a gaping need for a more efficient connection between research and practice in K – 12 schools.

The process of creative destruction will not ignore this need. As Keller notes, universities are working on this problem. But creative destruction may lead to other solutions. One reason, according to Andreessen (2011), is that “software is eating the world.” That is, traditional companies have gone bankrupt (Blockbuster, Borders, and Kodak) or they have transformed themselves into software companies because it is now a digital world and everything is driven by software. This is true not only at huge companies such as Apple, Hewlett-Packard, Netflix, Amazon, Time Warner, Disney, Microsoft, Google, Fed-Ex, and Wal-Mart, but at local restaurants and automobile repair shops because everything now relies on computers and digital information which, in turn, require software. Andreessen (2011) explained why this has happened:

Six decades into the computer revolution, four decades since the invention of the microprocessor, and two decades into the rise of the modern Internet, all of the technology required to transform industries through software finally works and can be widely delivered at global scale.

In other words, a global standardized platform, based upon a digital transformation, has been developed for software. Consequently, in today’s software driven world, if public universities cannot meet the need to make research information readily available to K – 12 school systems, then creative destruction may provide a software driven solution to fill this need.
In a way, this has already happened in the area of open educational resources. The Multimedia Educational Resource for Learning and Online Teaching (MERLOT) is a platform started in 1997. MERLOT is a repository of educational resources made available for higher education. Resources are available in many higher education disciplines including arts, business, education, science, social sciences and more, with over 35,000 educational resources available (Cohen, Reisman, Sperling, & Shmueli, 2012). MERLOT has over 100,000 members including many international members. The members range from institutions such as universities to individual professors. Importantly, it includes a feature providing peer review of some of the resources, such as teaching curriculum (Cechinel & Sanchez-Alonso, 2011). MERLOT is a platform that stores and catalogs resources, allows for open sharing, evaluates some resources, and is available globally.

While open educational resources have been critiqued regarding lack of quality control, MERLOT addressed this need by adding the peer review feature. But an Israel based platform named MAOR (the Meta-data and Object Repository) was established in 2009 to address the need of locating materials efficiently in open educational resource centers (Cohen, Shmueli, & Nachmias, 2011).

MAOR’s goals are to assist in the locating of online educational resources that have undergone review and to utilize them for learning. MAOR offers interoperability between learning materials in repositories, both Israeli and worldwide, and grants access to high quality learning materials for the learning and teaching public. (Cohen et al., 2011, p. 327)
MAOR “was developed in cooperation with MERLOT,” but included an adaptation to use Hebrew script so the platform could be used by Hebrew speakers. Critically, MAOR is intended not only for higher education, but for K – 12, too.

The point is if there is a need to connect educational research-based data with K - 12 practitioners in a user-friendly and efficient way, then my prediction is that creative destruction will lead to a standardized education platform to meet this need. The only question is how many cycles of creation and destruction will be needed to develop one.

Conclusion

This paper reviewed the origins of standardized platforms. Then it presented examples of massive standard education platforms that have emerged globally because of the process of creative destruction. In the field of education, the process of creative destruction first involves the initial development of a large number of standards, followed by cycles of the destruction of old standards and the creation of new ones. Creative destruction leads to the development of massive standardized education platforms because the standards are narrowed and refined until they introduce the key element of interoperability. Once a system is standardized on one common set of standards, individuals or organizations anywhere in the world can interact by using the standardized platform.

Negative implications included how standardized education platforms may become homogenized around only one knowledge system: namely, the “objective” knowledge system, which seeks out perfect efficiency. This may result in the exclusion of the “subjective” knowledge system in educational settings. Zhao has argued, for example, that the United States is moving in the wrong direction by focusing on accountability,
centralization, and standardization. An educational system based on only the objective knowledge system would destroy the very strengths of American education which produce high levels of creativity and innovation.

On the other hand, positive implications include how efficiency may be needed, especially in troubled economic times. An example was reviewed of a standardized platform for the 65 largest urban American school districts which allow comparisons among the school systems so all may achieve efficiency. Additionally, greater efficiency is needed to connect the research-based data located in universities to the practitioners working in the K – 12 education systems.

In light of globalization’s implementation of the process of creative destruction, now, more than ever, there is a need to recognize not only the emergence of massive standardized education platforms, but also to understand how the platforms should be developed and used. The appearance of these massive platforms is not an emerging trend. Instead, they are already present in the United States and globally. The process of creative destruction will not be stationary. More standardized education platforms will emerge.
References


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