Facing Education’s Mounting Challenges with Collaboration and IT

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Overview

EDUCAUSE President Diana Oblinger recently made two observations that serve well as a prologue to this ECAR research bulletin. In summarizing the thrust of a recent issue of EDUCAUSE Review, she commented in her presidential Homepage column that “organizational innovation typically lags technological innovation” and that “for IT leaders, the keys to the future are people-oriented skills such as education, influence, and negotiation.”¹ Both observations are critical to the readiness of the IT organization to become an effective and institutionally accepted contributor to a mission-strategic future.

This bulletin offers higher education executives and their IT leaders reasons and recipes for joining together to decrease the lag time from technological to organizational innovation. The two parties must first discuss and prioritize—in context—the strategic challenges facing higher education. The summary of these challenges, detailed below in The Completions Priority and Its Interconnected Challenges, can provide IT leaders a faster start toward richer discussions with executives. People-oriented collaboration skills will be needed to translate IT-enabled innovations in the larger economy—globalization in action—into actionable, IT-enabled strategies for measurably improving higher education’s cost structures and academic outcomes.

Globalization is less a process unto itself than a label for the visible results of using new technologies innovatively to redesign traditional processes and business models. In the service economy, IT is typically used to streamline cumbersome service processes and eliminate (or offer options to) the frustrating and cost-additive inconveniences inherent in pre-Internet management of time and place. This observation suggests a competitive reason within higher education to optimize the balance between high-tech and high-touch services through a “flex service model” that takes into account students’ impulses for flexibility and the need for institutional financial sustainability:

High-tech self-service anytime.
High-touch individualized assistance when the student wants it.

Thomas Friedman’s engaging “flat-world” book explains globalization and includes examples to demonstrate how game-changing partnerships and collaborations can be built on IT-enabled external sourcing.² Although his examples are from business, a recently published monograph, “Waste Not the Learning Productivity Crisis,” includes higher education scenarios that map to Friedman’s eight external sourcing strategies expressed as verbs: out-sourcing, in-sourcing, open-sourcing, off-shoring, supply-chaining, work-flowing, in-forming, and steroid-ing.³ For example, some U.S. colleges out-source online math tutoring services from companies that in turn off-shore mathematics expertise from regions where it is more plentiful and relatively less expensive, such as in English-speaking mathematics enclaves in India and Asia. Alas, when Friedman’s “flattening forces” are discussed within higher education circles, attention typically turns to studying abroad, opening a branch campus abroad, or admitting more students from abroad to a home campus—all of which are valuable but traditional examples of globalization in higher education.
Ironically, the IT tail can lead the educational dog in the right direction

A more expansive discussion of the “flattening” potential of IT in higher education is long overdue. IT leaders are eager to participate in such a discussion. Most cannot lead the discussion, however, because the initial focus should be not on IT but on mission challenges that cannot be resolved without resort to IT-enabled transformational strategies, including Friedman’s sourcing strategies.

Gridlock! On one hand, many higher education executives are unfamiliar with “IT-enabled transformational strategies.” On the other, most IT leaders do not know as much about higher education’s “mission challenges” as do their executive leaders.

This bulletin aspires to bridge the gap by outlining higher education’s priority challenges in terms familiar to executives and governing bodies in higher education. Because one of these challenges is higher education’s slowness to grapple Friedman-like with IT-enabled strategies for improving productivity, IT leaders will find several “hooks” for their participation in collaborations focused on the future of higher education and the necessary role of IT in that future. They should keep in mind, however, that all of Friedman’s game-changing partnership examples focused not on IT but on creating new business models or redesigning familiar ones—by using IT as a lever.

The two parties also should recognize that external expectations for higher education do not rely solely on higher education. For instance, because what happens (or doesn’t happen) in primary and secondary education affects higher education, the education sectors can no longer ignore (or point fingers at) each other. Nor do many external expectations lie within the reach of single-institution responses. Executive and IT collaboration at the institutional level of strategy, planning, and implementation will be necessary, but it is far from sufficient for higher education to fulfill its destiny as humanity’s best hope for securing environmental, economic, and societal sustainability.

Trust and collaboration at macro scale are needed among education providers (at all levels of education) and education’s external investors (students, families, governments, donors, employers, and suppliers). A possible, if improbable, U.S.-based open collaboration is described herein as one model for evolving an open global collaboration. This model will make it easier for higher education providers and their external investors to balance their economic rights and responsibilities to create a more sustainable education enterprise. IT leaders will recognize similarities (to the food-for-thought open collaboration) among the Internet Engineering Task Force, the World Wide Web Consortium, and the IMS Global Learning Consortium, each governing a separate domain of technical interoperability to the economic benefit of a plethora of often divergent economic interests. Educational interoperability in the nontechnical sense of educational processes and information should be a shared goal of all education providers and their external investor beneficiaries. Ironically, the IT tail can lead the educational dog in the right direction.

**Highlights**

Higher education executives and governing bodies recognize that investments in IT are necessary to institutional operations and to the satisfaction of the faculty, staff, and student body. IT leaders are pleased to satisfy their institutional constituencies, and they also strive for mutual satisfaction of a more strategic nature. They aspire to collaborate with their executive colleagues to make the IT organization an effective, acknowledged contributor.
not only to operational excellence but also to measurable, strategic institutional performance. They want to collaborate with executive leadership to develop and implement strategies for harnessing campus and cloud technologies to improve institutional productivity, distinction, and competitiveness. To accomplish this, mutual trust is required.

**Satisfying the Institution: “Lord, You Know It Ain’t Easy”**

Successful collaboration is based on shared goals and trust among the participating parties. Trust in an IT organization and its leaders, however, can be elusive in its institutional expression. Should this be surprising? Success in education, after all, includes some double-negatives, such as not failing a course, which is not the same as excelling in the course. Like undistinguished but passing coursework, absence of failure in an IT context isn’t sufficient to earn the recognition and trust required for strategic collaboration. Indeed, absence of IT failures is both expected and underappreciated.

Many successful IT leaders earn recognition and trust by “stepping it up a notch” (above the absence of IT failures). They not only “keep the trains running on time” at least 99% of the time, but they also work with student, faculty, and other constituencies to identify and support infrastructure and applications that increase individual and social productivity. Even so, the recognition of IT excellence and the trust it should generate may remain elusive in strategic institutional terms because individual and social productivity are mostly about helping constituencies do more enthusiastically and conveniently what they have been doing less conveniently—a form of continuous quality improvement rather than of strategic transformation.

**The Current Culture of “Satisficing”**

Even when IT leaders and their executive colleagues agree that IT will be used to transform service processes (rather than continuously improve them), mutual satisfaction might remain elusive. For example, a 2005 ECAR research study revealed that significant investments in ERP systems and the business process redesign projects they enable, though frequently successful in terms of projected IT budgets and schedules, often yield spotty institutional returns on investment. Many CIOs surveyed in the study cited transformational process redesign as a goal for which executive and functional (non-IT) leadership support was either initially absent or had diminished over time. For these CIOs and their executive sponsors, process redesign project results were described as “satisficing”—a term coined by 1978 Nobel Laureate in Economics Herbert Simon to portray efforts that might not be optimal but that would keep those involved happy enough. The study reveals that IT and non-IT leaders alike may not be fully satisfied when IT investments prove not to be transformational, even when being well managed as cost centers. Has the day passed, with a shove from the “Great Recession,” when significant investments in IT will be made with the knowledge that they may only “satisfice” their IT and executive sponsors?

**It Takes Two to Tango**

In spite of their handshake agreements and individual best efforts, IT and non-IT leaders may come to feel that the institution “can’t get no satisfaction” from its IT investments. Non-IT leaders, after all, should not be expected to describe their IT anxieties by linking...
IT to an explicit transformational expectation. They instead are likely to cite the significant cost of providing IT services to the satisfaction of all constituencies and then ask, “Where’s the beef?”—the anticipated but non-specific improvements to institutional performance. In response to such queries, IT leaders should silently reflect on the old saw that “it takes two to tango” and then learn how to tango in non-IT terms—because it is unreasonable to expect non-IT leaders to tango in IT terms.

How can IT leaders better understand the mounting external pressures on higher education? Those pressures are awakening institutional executives to the need for an IT-enabled disruptive, transformational redesign of academic and administrative services and processes—a redesign of higher education service and “business” models.

An executive and board leadership perspective on these external pressures can be described, up to a point, without reference to IT. The interconnected priorities summarized in this bulletin, however, imply that the major issues facing higher education cannot be resolved at scale without recourse to IT-enabled process redesign strategies. Another goal, then, is to outline (again in terms comprehensible to both IT and non-IT leaders) the three IT-enabled redesign strategies that have become necessary (but not sufficient) tools for measurably improving upon and accounting for institutional performance: external sourcing strategy, flex redesign strategy, and course redesign strategy.

**Education as a Common Good**

Education is clearly a “private good” to those who are employed by higher education institutions and to those who, as a result of successfully completing higher education requirements, enjoy earnings and employment rates that outstrip those of the less educated.6

Higher education is seen as a “public good” by modern governments, which are increasingly competing in a “brains race” for intellectual capital. Despite investments of public funds for higher education, the demand for public funding exceeds available resources.7 Education is accordingly a “common good,” garnering support from both government and private investments, even while it continues to become increasingly unaffordable to all parties.

**The Completions Priority and Its Interconnected Challenges**

President Obama, in a 2009 address to Congress, set a major goal: “By 2020, America will once again have the highest proportion of college graduates in the world.”8 His goal calls for a 50% increase in the higher-educated proportion of U.S. adults over a 10-year period. Meanwhile, the Gates Foundation is also working to “double the number of low-income adults who earn a college degree or credential with genuine marketplace value by age 26.”9 Other policy leaders and major external investors in education around the world are also voicing similar completion goals. (“Completion” includes both the attainment of college degrees and the completion of other advanced courses of study.) When synthesized, these goals become the “elephant” in education’s room, which can be described in outcome-oriented language as follows:
Completions Priority: To advance and sustain environmental, economic, and societal security, increase the percentage of adults holding higher degrees or other advanced workforce credentials.

At the scale of President Obama’s challenge, increasing the proportion of completions is problematic, if not impossible, within current educational practices and financial models. Program enrollments and resources must align with identified economic development goals and critical market demands in the professions and the workforce in every geopolitical context (regional, national, and multinational). Delivery expenses incurred by education providers and delivery charges to education’s external-investor beneficiaries must become mutually affordable. Higher education participation rates and completion rates must be increased in tandem. Reflecting on these and other interconnected challenges will reveal the complexity of the completions priority and lead to a deeper understanding of the necessary role of IT in addressing the completions priority.

The systemic analysis that follows provides an opportunity for IT leaders and their non-IT counterparts to build consensus around IT-enabled strategies that can be tailored to local contexts, while also yielding results that can contribute to global progress on the completions priority—provided that macro-scale collaboration can be realized.

1. Leaks in the education pipeline: In many geopolitical contexts, both secondary and higher pipelines are copiously “leaking” dropouts and failed students. Serious retention and persistence leaks at one educational level are amplified at the next and must be repaired at every level, even as the pipeline scales up to increase participation rates.

2. Growing proportion of underprepared, needy students in the pipeline: When geopolitical populations are analyzed in terms of ethnic, cultural, linguistic, financial, and other socioeconomic variables, the implication of significantly increasing participation and completion rates is that already leaky education pipelines must become increasingly weighted by underprepared, needy students. This dynamic will sorely test both current academic practices and the financial capacity of the sources for need-based aid.

3. Lack of interoperability of educational processes and data: The global education marketplace is a patchwork of “gated” completion opportunities. Each opportunity is accessible under unique gating factors for admission and completion. Opportunities seized then result in records and credentials that are difficult to compare and transfer across educational and governmental boundaries, making education less portable (transferable) and accessible. Compare education’s needs in the United States with healthcare’s need to drive efficiencies and the portability of medical records with a unique, digital, privacy-secured patient identifier. Critical data elements, such as privacy-secured student and instructor identifiers, do not persist across institutional and other boundaries.
To increase the proportion of higher-educated adults, education must be affordable to the students, governments, and donors

4. **Waning per-student government funding:** Inflation-adjusted per-student government subsidies in the United States (and many other countries) are under severe downward pressure as economies at all geopolitical levels navigate the “Great Recession” and the ongoing disruptive vagaries of globalization. Indeed, the average state per-FTE subsidy for public higher education in the United States is hovering at a 25-year low in constant dollars.\(^\text{12}\)

5. **Need for mutual (multi-party) affordability:** To increase the proportion of higher-educated adults, education must be affordable to the students, governments, and donors comprising the primary private and public sources of revenue to education providers used to pay their unit “production” expenses (such as annual per-student or per-completion expenses). Unit revenues must exceed unit expenses, even in education, and that is becoming a structural challenge according to the above indications that many governments and students are increasingly unable to afford their contributions (public subsidies and net tuitions). Hard data supports the need to address this structural challenge in the United States.\(^\text{13}\)

6. **Upside-down financial model:** The completions priority focuses on completing degrees (and other advanced programs of study). In contrast, education providers’ revenues, in the primary forms of net tuition and government subsidies, are still based largely on attempting courses (or credit hours).

7. **Out-of-synch accountability metrics:** Among the key regulatory education-provider metrics in the United States are expense per credit hour (or per course) and completion rate (the proportion of entering students who complete a program within a fixed period of time). Neither metric is aligned with the productivity emphasis on affordably scaling up higher-level completions. Key metrics should be revised.

8. **Productivity crisis:** Education seems reluctant to confront the concept of productivity, yet the three-way mutual affordability crisis described above is a productivity crisis. Delivery expenses incurred by education providers and delivery charges to education’s external investors must become mutually affordable, therefore stabilized or reduced on a per-completion basis, even as the completions priority demands that participation and completion rates be increased in tandem. The completions priority should be tracked through metrics that account for productivity at scale.

9. **Culture trumps IT-enabled productivity:** IT is a necessary expense in education but seldom is viewed as a strategic investment in service process redesign or other game-changing innovations that increase productivity or transform the revenue model. A taxonomy of IT-enabled productivity can be linked to education culture in a
three-tier construct. Tiers b and c (below) are strategic and require cultural changes that may be disquieting, or even disruptive.

a. Individual and social productivity "satisfice" in today’s academic culture: IT is ever changing and, with it, the nature of the productivity tools available to individual option—such as today’s cloud-based tools and information sources. Improving everyday individual and social productivity, academic and otherwise, is a well-established IT-enabled goal reflected in baseline application and infrastructure investments and added-value professional development services and student-satisfaction services. As argued earlier, however, seldom will IT be institutionally judged to exceed its “satisficing” status in the absence of IT and executive leadership collaboration.

b. Information productivity requires a culture of evidence: Education leaders recognize the need to improve access to and the accuracy of enterprise information as a key to creating a culture of evidence and accountability. Cultural resistance, however, typically stymies the effective use of new reporting and analytics systems. Only sporadically have leaders been able to realign culture by using business-intelligence tools to analyze and redesign the educational models and processes that affect productivity and the completions priority.14

c. Learning productivity requires a culture of performance: Accounting for performance is not the same as improving performance. Too few leaders synthesize and connect the evidence of performance with actionable plans for tapping IT’s enabling role in increasing productivity, especially in terms of the core learning mission—“learning productivity.”

10. Education fails Globalization 101: Globalization, as argued earlier, is the broad process of IT-enabled innovation and service process redesign that has increased productivity and competitiveness in most sectors of the economy, excepting education and healthcare. Today’s three primary IT-enabled learning productivity strategies have been too often ignored in education, even though they have been demonstrated to improve student access and success while also stabilizing or reducing per-student expenses and, thus, improving mutual affordability to education providers and education’s external investors. The first two of these three overlapping IT-enabled strategies were touched upon in the Overview section, and all have been described in some detail elsewhere:15

a. External sourcing strategy: As described in Thomas Friedman’s “flat world” book, IT-enabled partnering and external sourcing can improve quality and reduce costs in non-core service functions—in the case of education, these functions could be IT leadership and management, marketing and recruiting, academic program development, retention, grants management, institutional research, enrollment management, advancement management, performance management, and so on.

b. Flex redesign strategy: Optimize for the convenience and efficiencies of online asynchronous self-service options in all academic and administrative
Globalization is the broad process of IT-enabled innovation and service process redesign that has increased productivity and competitiveness in most sectors of the economy, excepting education and healthcare service functions, while also responding in a timely manner to requests for individualized assistance (using toll-free call centers, walk-in support centers, real-time appointments with instructors and tutors online or in-office, and so on). Most students need help with learning!

c. **Course redesign strategy**: Redesign high-enrollment core or foundational courses for measurably improved learning outcomes and reduced per-enrollment expenses (as pioneered and supported by the National Center for Academic Transformation). Scaling the average results demonstrated in the initial NCAT project could lead to overall per undergraduate-enrollment cost reductions of 8–10%.

11. **Accreditation as collusion**: Accreditation’s peer reviews can help an education provider formatively improve services and outcomes. However, failure to agree upon and openly report at least a few common, independently assessed, summative peer comparability measures related to completion outcomes and student learning might expose accreditation organizations to external charges of collusion—similar to the charges leveled at Moody’s, S&P, and Fitch for their role in the recent sub-prime mortgage scandal in the United States.

12. **Failure to use independent assessments of student learning**: Education has used independent, normative learning assessments for years. Most assessments have relied heavily on the multiple-choice model, but, equally important, their use has not provided privacy-secured data at the student level for use in longitudinal data analyses that link students, scores, instructors, and institutions. Even when normative assessments such as the Collegiate Learning Assessment are used, they are used in the value-added learning model that samples and compares, for example, a group of second-year students with a different group of fourth-year students. Recent but limited research by Richard Arum and Josipa Roksa has revealed that not much value is being added in such cases. The above reference to the sub-prime mortgage scandal points to the need for a trust factor—the need to assess student learning outcomes for all students independent of the institutions students attend and the governments that support those institutions and students financially. This already happens in some professions (such as the law and health-care professions) and in some workforce domains (such as Microsoft and Cisco certifications), but there cannot necessarily be an independent outcome assessment for every program, especially for programs in arts and sciences. There is at every link in the education pipeline, however, a shared critical goal to improve core human communications fluencies and critical thinking skills. These skills are at the heart of learning readiness at every stage of intellectual maturity and lifelong learning. There are, moreover, extant independent, constructivist assessments of these skills emerging from assessment providers in the United States (ACT, College Board, and Council for Aid to Education) and abroad (Organisation for Economic Co-operation and Development and its evolving AHELO assessment suite anchored by the Council for Aid to Education and Development).
The interconnectedness of completions challenges implies that any institutionally actionable discussion of any of these challenges should include the IT leader as an equal for Aid to Education’s Collegiate Learning Assessment.¹⁸ Such instruments could become the basis for universal, periodic, age-based assessments of learning readiness and for the concordance tables and longitudinal research that link students, instructors, and institutions in peer and socioeconomic groupings.

**What It Means to Higher Education**

The completions interdependencies outlined above speak to the complexity facing the major planning efforts and projects now under way on campuses, “above” campuses, in states and regions, and in nations and unions of nations. Several key words and phrases come to mind in connection with this myriad of well-intentioned efforts to reform or transform higher education and, undeniably, all of education. Such phrases include accountability, accessibility, affordability, efficiencies, cost reductions, performance, productivity, doing more with less, retention, persistence, student success, collaboration, restructuring, race to the top, student unit databases, longitudinal data systems, blended learning, community-source solutions, cloud-source solutions, and so on. The overarching issue begged by all of these efforts is whether they will prove to be transformational or only “satisficing” in their collective outcomes.

**Implications for Higher Education Executives and IT Leaders**

The interconnectedness of completions challenges implies that any institutionally actionable discussion of any of these challenges should include the IT leader as an equal. The complexity involved, after all, is unlikely to be resolved on a cost basis that ignores the need to improve productivity. IT-enabled strategies will be required to improve upon a number of critical student success factors and services while also stabilizing or improving mutual affordability among institutions, students, governments, and other economic beneficiaries.

Another implication is that leaders representing most functional areas should also be involved in the discussions, owing to the institution-wide co-dependencies outlined above. The same co-dependencies also reveal that the completions priority—the elephant in higher education’s room—could also have been labeled with other descriptors, such as “educational attainment,” “student success,” “learning productivity,” “revenue generation,” and so on. For example, a tuition-dependent non-public college in the United States might focus on completions not to help meet President Obama’s formulation of a completions priority but primarily to generate net new revenues while also improving completion rates—though evidence reveals that independent nonprofit tuition-dependent institutions lead public institutions in completion rates in a number of dimensions.¹⁹

Another result of interconnectedness is to confirm the earlier claim that the completions elephant in the room expects higher education to work across geopolitical and education-sector boundaries. Only then will education’s processes and digital access points and records become interoperable and create what IT leaders might call a “community-source” market, enabling the collective education enterprise to be the primary source of leverage for sustaining humanity’s environmental, economic, and civic security. This line of thought also reflects earlier references to “education providers and education’s external investors,”

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a macro concept that takes the discussion beyond the discussion of any single institution, education sector, or geopolitical jurisdiction. Thinking globally while acting locally is not good enough to address the completions priority at the scale envisioned by President Obama and the Gates Foundation. The more urgent strategy is to think and collaborate at the macro level on interoperability issues. In this way, institutions will find ways to participate in these macro-level solutions. With that in mind, another co-dependency in the completions priority deserves separate attention and explanation: the matters of trust and dissonance among education providers and education’s external investors.

**Trust and Dissonance: Devils in the Details of the Elephant**

Major points of dissonance currently prevail among education providers and their external investors. Consider, for example, these three dissonant perspectives, which compromise the trust required to make transformational collaboration viable:

- Many education providers grumble about weak parental and societal support, underprepared students, and inadequate, unreliable, and intrusive government funding.
- Many students and families find higher education unaffordable, inflexible, opaque, slow, and unconnected to the digital cloud in which people increasingly learn and communicate.\(^{20}\)
- Many governments judge education to be unaccountable, underperforming, and reliant on a “business model” that is overly costly to students and public coffers.

Regulatory impulses are escalating in the United States to resolve the latter two points of dissonance, reflecting an unstated policy premise that the completions priority is too critical to trust solely to education providers. For example, the massive and largely incoherent U.S. legislation, The Higher Education Opportunity Act, 2008, which most recently renewed the Higher Education Act, is an example of regulation gone wild.\(^{21}\) The latest round of regulatory discussion in the United States focuses retrogressively on the definition of a credit hour, and it also would micro-manage the policies and operations of for-profit higher education providers—diminishing their potential as an asset in the U.S. version of the brains race.

The three-party dissonance outlined above echoes the proverb of the blinded who use non-visual analytical senses to feel their ways around a massive creature, failing to synthesize their individual discoveries into a holistic recognition that an elephant is in the room! The completions priority is the elephant in education’s room. It has grown to proportions that are breaking down walls that have separated higher education from primary and secondary education and from workforce and adult education. Globalization, moreover, has broken down geopolitical boundaries as the Internet rapidly interconnects everyone and everything in the modern world. The completions priority has global proportions and is plagued by nearly unmanageable complexity—similar to environmental sustainability, which is no longer manageable solely through local and regional actions that are not coordinated to achieve global sustainability.
What Would Elinor Ostrom Do?

An economic perspective on the above three points of dissonance will be useful. Does a “tragedy of the commons” threaten the economic beneficiaries of completions?22 Education’s external investors expect to be economic beneficiaries of their own completions-focused investments in education providers, which also must benefit economically in order to “produce” completions. Economists might view the three dissonant perspectives as evidence of dysfunctional “economic governance” of the “common-pool resource” that is the education enterprise—or the common good of the completions production system with its myriad of invested economic beneficiaries.23

Professor Elinor Ostrom of Indiana University is a 2009 Nobel Laureate in Economics who was honored for her “analysis of economic governance, especially the commons.”24 Her analysis pointed to open collaboration as a better bet than either private control or governmental control/regulation for sustaining a natural resource of significant common-good economic value. If heeded, her advice might have prevented the 2010 BP oil spill. Ostrom’s work and guidelines are being adapted successfully, if unknowingly, to other resources of common-good (shared) economic value. Indeed, IT leaders will instantly recognize three such examples of open economic-governance collaboration, each dedicated to a different aspect of IT interoperability and each under constant threat representing a possible tragedy of the commons.

- The Internet Engineering Task Force is a collaboration for governing (advancing and protecting) the common economic good that is today’s globally interoperable network of networks, the Internet. Current machinations about “net neutrality” could result in a tragedy of the Internet commons.

- The World Wide Web Consortium is a collaboration for advancing and protecting the common economic good that is today’s interoperable World Wide Web of information and services. Cyber intruders and criminals could increase distrust to the level of a tragedy of the Web commons.

- The IMS Global Learning Consortium (along with PESC and SIFa) develops and promotes interoperability standards enabling the seamless flow of digital content and records within the education enterprise. That the three organizations are not one, or at least better integrated, in pursuit of interoperability threatens a tragedy of the commons of interoperability among educational technologies.

Now that education is a common good of critical environmental, economic, and societal value, it deserves, but does not have, economic-governance collaboration among education providers and education’s external investors to help restore trust among the parties while advancing the completions priority. A formal collaboration mechanism on a global scale, no doubt, would have to be an aggregation of nested peer-group collaborations based on geopolitical and educational boundaries and reasonably standardized membership protocols. The ultimate purpose of such collaboration at any level of nesting is to create and financially sustain an education marketplace that is interoperable not only in its digital infrastructure and applications but also in its educational processes and the digital records generated by those processes.
Goals for an Ostrom-Like Completions Collaboration

One among many possibilities for forming an Ostrom-like economic governance collaboration for completions will be offered here, but only after first offering a guiding list of outcomes for discussion at all levels of education. The list below is driven by the three points of dissonance in the preceding section and by the need to cohere the disparate issues outlined above in The Completions Priority and Its Interconnected Challenges.

1. Unbundle the education marketplace through open compliance with nontechnical and technical interoperability protocols for the selective transferability of teaching and learning data, including credits and credentials—a distributed longitudinal data system in which:
   a. Each education provider and independent assessment provider has the right to capture selective data about students and instructors as part of the contract between the parties involved.
   b. Each individual (student or instructor, for example) controls a privacy-secured record and portfolio of personal educational accomplishments to share selectively with sources of funding, education, and employment as part of a trusted relationship of mutual benefit to the parties involved.

2. Oversee an open digital learning-cloud community (within an unbundled education marketplace) that provides free access to comparative information about education (and all its implications for personal and collective success) and to informal, online, asynchronous learning opportunities and resources, such as free content for students and instructors.

3. Broker financial and other incentives for individuals to commit to a higher education as a major, achievable life goal—including financial incentives for parents.

4. Focus and stabilize public (government) funding for higher education on need-based aid that is earned in support of the individual commitment (item 3) to the completions priority and its attendant principle of equal opportunity.

5. Enable and manage compliance protocols around a trusted learning productivity agenda,” perhaps initially defined to:
   a. Increase the postsecondary-educated proportion of the adult population.
   b. Publish summary-level education-provider productivity metrics formulated to be universally transparent but meaningfully comparable only within peer groupings. Such metrics, for example, might be as simple as the annualized ratios of
      • Completions granted to unduplicated student headcount
      • “Education and Related” expenses to completions granted (E&R expenses in the United States have been defined from IPEDS data by the Delta Cost Project.25)
   c. Track individual learning and workforce readiness longitudinally in the aggregate via periodic, age-based, independent, constructivist assessments of students’ learning readiness, and use the data for
      • demographic population studies of learning readiness, and
• describing the learning readiness of the student bodies of peer-grouped education providers.

6. Preserve accreditation’s formative peer-review process for institutional improvement by a priori requiring adherence to the above minimally invasive external accountability protocols.

7. Encourage education providers to compete in learning-centric terms that are also learner-centric in providing options for an affordable and flexible learning experience.

Financial Leverage for an Ostrom-Like Completions Collaboration

If supported by a financial lever designed to motivate both education providers and education’s key external investors, an open economic governance collaboration could become a vehicle for scaling up equitably affordable, completion-probable educational opportunities. For example, governments could catalyze open, inclusive collaboration by using public funding to rebalance financial rights and responsibilities among education providers, assessment providers, governments, and students/parents. Imagine, for instance, that primary federal financial support for higher education in the United States were to flow directly to students through promissory need-based grants that ultimately have to be “earned.” The grid below offers suggestions for balancing responsibilities incurred and rights earned among four of the major collaborating parties.

<table>
<thead>
<tr>
<th>Parties Represented</th>
<th>Responsibilities Incurred</th>
<th>Rights Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Submit to periodic, age-based, independent, constructivist assessments of learning readiness starting no later than, say, age 15 and persisting no longer than a first baccalaureate-level degree.</td>
<td>Defray the costs of services (provided by participating assessment and tertiary-education providers) from a promissory individual grant account having need-based value estimated annually from IRS data, starting at birth.</td>
</tr>
<tr>
<td>Assessment Providers</td>
<td>Remain independent from government and education providers while securing and maintaining assessment data and concordance tables for age-based learning-readiness assessments of like purpose.</td>
<td>Bill a participating student’s grant account to help defray assessment fees incurred by the student.</td>
</tr>
<tr>
<td>Education Providers</td>
<td>Track and report a few minimally intrusive, shared accountability metrics for peer-group analysis. Maintain student, instructor, and other privacy-secured identifiers for data extraction in support of longitudinal research.</td>
<td>Bill a participating student’s grant account to help defray the cost of learning services provided to the student.</td>
</tr>
<tr>
<td>Governments</td>
<td>Commit to promissory need-based grant accounts to help students pay the costs of completing learning-readiness assessments and academic programs (from participating assessment and tertiary-education providers).</td>
<td>Extract privacy-secured data (from participating assessment and tertiary-education providers) for longitudinal research into learning readiness and academic program completions and their costs.</td>
</tr>
</tbody>
</table>
The leverage of earned, need-based federal grants could catalyze the creation of a new economic-governance model among education providers and education’s external investors. The goals and financial leverage for an Ostrom-like collaboration along the lines outlined in this and the preceding sections could fuel a revitalization of the concept that all people are created equal. The completions priority, after all, represents a practical path to equal opportunity—and an affordable path for those willing to assume responsibility for periodic assessments of their learning readiness through postsecondary education in return for any government assistance needed to complete a postsecondary program as prelude to a lifetime of learning. In the United States, the model could also remove the already blurred distinctions between nonprofit public, nonprofit private, and for-profit private education by extending the federal "earned-grants-to-students" strategy to state models for funding education.

**Breaking the Logjam of Mutual Affordability among All Beneficiaries**

Is the above model affordable in the United States? Probably so, but almost certainly so were federal tax deductions for dependent children eliminated and the federal savings redirected to promissory earned grants to needy students whose families committed to education as the means to bequeath a brighter future to their children and future generations.

**Is the Improbable Possible?**

This bulletin has presented a number of actionable agendas. They include options for campus IT and executive leaders to work together to address critical issues that are part of the fabric of the completions agenda, and to use IT as a lever to ensure flexible access and affordability while accounting for the results. Options for collaboration also extend beyond the campus to meet the need to balance rights and responsibilities among education providers and their external investor beneficiaries. One of many possible “Ostrom-like” economic governance collaborations was described with IT being a lever for interoperability and distributed, longitudinal data systems as part of that interoperability. The example may be an improbable one, owing to its reliance on the redesign of U.S. funding models for higher education. It is encouraging to note that U.S. policy makers are now promoting the role of federal grants and loans not only in access to higher education but also in encouraging college completion.26

It is especially encouraging to recall that higher education IT leaders have been participants in many other innovations that have changed the nature of service organizations around the “globalized” world by realizing that the organizational IT tail is often needed to lead an organization forward.
Key Questions to Ask

- What are the executive cabinet level priorities at your institution or system that fit into the completions priority and its interconnected challenges? How do they match or differ from those described here?

- In what ways are the IT organization and its leadership positioned to participate—or not—in the discussion of completions-related priorities?

- How would you go about explaining, in context, how to customize the three IT-enabled strategies for improving productivity and accountability (noted herein) to meet the most important challenges within your version of the completions priority?

- What are the opportunities to form partnerships or consortia around the goals of an Ostrom-like completions collaboration—perhaps using the financial leverage inherent among like-minded institutions, within systems that are state funded, or within regional and national efforts involving government(s) and seed funding?

- How can IT leaders at regional, national, and international levels help move the impact of IT on education from an unsettling state of “satisficing” to a strategic, transformational state—in parallel with the role that higher education IT leadership played in the Internet, Internet2, the web browser, and other innovations?

Where to Learn More

Websites

- The Learning Cloud, http://institutionalperformance.typepad.com

Publications


- Graves, William H. “Waste Not the Learning Productivity Crisis: Transforming Educational Opportunity into Educational Assurance,” EDUCAUSE Review 45, no. 1 (January/February 2010), a “Web Bonus” of monograph length, http://net.educause.edu/ir/library/pdf/ERM1014.pdf. Starting on page 12, this article has several examples of the use of the three IT-enabled strategies for improving learning productivity under the heading “Profiles in Productivity.” The brief profiles from Antioch University, the Tennessee Board of Regents, and the
Western Governors University are especially relevant to the theme of transformation.


**Endnotes**

14. Kvavik, Goldstein, and Voloudakis, Good Enough!

About the Author

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