

# Achieving Learning Impact Through Strategic Investment in Technology:

## The IMS Global Learning Consortium Executive Strategic Council Perspective

### Introduction

Who has the responsibility for improving learning worldwide? Albert Einstein has been quoted as saying, "The significant problems we face cannot be solved at the same level of thinking we were at when we created them." Perhaps the same can be said about our educational systems and processes.

The IMS GLC has formed the Executive Strategic Council (ESC) for the purpose of providing leadership in highlighting the major challenges to the learning industry community worldwide, current and future, and to help guide the strategic priorities of IMS GLC. To encourage innovative responses to these challenges the ESC provides guidance to IMS GLC's Learning Impact

Awards (LIAs) and Recognition Program and is featured in the IMS GLC's annual Summit on Global Learning Industry Challenges. The annual LIA program recognizes the most impactful uses of technology to address global learning challenges, and recognizes product and service innovation within the context of a specific organizational, system, country, or wider implementation.

In preparation for the inaugural April 2007 LIAs, the ESC members were interviewed to provide their thoughts on the potential use of technology in addressing learning challenges. This article summarizes those thoughts and provides a brief synopsis of the 2007 LIA finalists.



To access the complete *Achieving Learning Impact 2007* report, visit:  
<http://www.imsglobal.org/learningimpact2007/li2007report.cfm>

## The context

Just a few decades ago, post-secondary institutions operated virtually unchallenged. Increasing costs were not questioned and institutions expressed little concern over the wants and needs of their students. Today, the focus has shifted to students as “customers” and a wide variety of parties interested in access, affordability, and accountability.

Is higher education in the midst of a revolution, or is the world merely experiencing a seismic adjustment? What is driving this change? And where is this discussion about assessment and learning outcomes headed?

“Every generation wants to believe that the crises and challenges of their generation will transform the world. No one knows if they are at a watershed until the watershed is history,” says John Lombardi, chancellor and professor of history at the University of Massachusetts Amherst.



John Lombardi

There have been moments in the history of U.S. higher education, Lombardi adds, that were expected to change the world in dramatic ways; events like the land grant phenomenon of the late 19th Century, the GI Bill, and the decade of the 1960s that ushered in student revolution. In the end, most institutions have changed primarily in response to available revenue and the needs of their various constituencies. And while they have responded to those demands for change in subtle ways, most institutions, conservative by nature, have resisted changing their core values or structures.

However gradually, higher education appears to be shifting its focus from reputation and prestige to performance, and for a variety of reasons.

“While reputation and prestige (i.e., exclusiveness) will always be an important differentiator for certain schools, there is intense competition in higher education for students, and this competition drives the need for differentiation,” says Doug Kelsall, president and COO of eCollege. “Performance and learning outcomes are one way for schools to differentiate themselves in a competitive environment.”

Another driver for the increasing focus on performance is the intense competition for access to public funding. As higher education comes under greater scrutiny, legislators and other key constituents are looking for greater accountability and return on their investment. A continued focus on the performance of higher education is one way to justify public investment in higher education.

Nick Allen, provost and chief academic officer of the University of Maryland University College, says another factor driving the focus on performance is society’s

need for increasing numbers of students to have access to a post-secondary education. "The elite academic institutions that were built on reputation for their inputs and selectivity will not disappear. But they will become less and less relevant in terms of providing educational opportunities for society as a whole.



**Doug Kelsall**

They will continue to play an important role in carrying out their research functions, but not for delivery." While accrediting agencies and regulators will increasingly insist on measuring performance outcomes, Allen says it is incumbent upon higher education institutions to monitor those outcomes to determine the learning rates of their students. "In earlier times, when selectivity was emphasized, the assumption was that if only the few best qualified students were admitted, and if those students put in the required seat time and were exposed to the right faculty, then learning would take place. Higher education in America was built on that premise for the most part. But high access institutions today can no longer afford to make that assumption without measurement, if they want to be quality institutions."

Many of the most prestigious institutions received their status by setting the bar for performance as measured by the reputation of their graduates or helping to drive exacting professional standards in specific fields for which their programs

have become synonymous with excellence. Those institutions measured performance in new ways, such as learning outcomes. And for those interested in learning outcomes, there is widespread disagreement over what the goals for performance should be. "Different schools and different students are looking for different outcomes from the educational process," says Kelsall. "For some, it is skills for a career. For others, it is a well rounded individual. The 'focus' on performance can get a bit hazy if there is not widespread agreement on the goals, or allowance for different types of goals."

Yet, despite all the talk of learning outcomes and performance, is the reality that the connection between research and international prestige going to drive governmental investment in higher education around the globe? "I do not believe that there is a movement away from the importance of reputation and prestige in the British higher education sector," comments Paul Clark, Pro-Vice-Chancellor (Learning and Teaching), of The Open University of the U.K. "There is the perceived need to compete internationally at the highest level of research performance and available Government-provided research funding have limited the resource input into teaching in order to focus on research."

Arthur Lendo, president and professor of management at Peirce College, says the advancement of technology, especially internet mediated distance learning, is contributing to the continued development of a commodity-like marketplace in higher education and that those institutions without large endowments will be forced to focus more on performance.

"Technology is driving both evolutionary and revolutionary changes simultaneously," adds Lendo. "Institutions will

respond to the marketplace unevenly. Elite privates and flagship state institutions will be the last sectors to respond based on perceived prestige.” He predicts that the rapid creation of new knowledge will likely dictate a faster rate of change in higher education although reactionary forces will continue to dig in their heels.

Dr. Carl Kuttler, President of St. Petersburg College in Florida, notes that we are on a “change treadmill” today, driven by “the changing nature of our students, the rapid evolution of technology in supporting teaching and learning, and, yes, demands from the students and the public for improved performance.” He does not see this as a negative, or something institutions should have to be forced to do. “Accountability in the best sense means giving students the skills and tools they need to be successful in a dramatically changing world.”

Malcolm Read, executive secretary of the Joint Information Systems Committee in the United Kingdom, says the British government has so far placed less pressure on documented performance measurement. He also believes that measuring the performance outcomes of graduates is complicated.

“Universities are judged by the caliber of their graduates (and their research),” he says. “However, as the caliber of graduates is based on their subsequent performance in the world, this takes time to establish and the perception may lag behind realities, for better or worse. The performance and reputation of graduates determines the perceived value of an institution’s degree. A performance table of cost / (immediate) learning outcomes then appears too simplistic.”

As the number of institutions, both for-profit and not-for-profit, increases in number, there is more opportunity for performance-centric programs that cater to students interested in job and career opportunities. “Access, choice and opportunity are becoming more and more available to all,” adds Bernie Luskin, executive vice president and director of the media studies program at Fielding Graduate University. “The impact on community colleges is a good example of that. It is happening through improved media communication, entrepreneurship, and that the fact that the world is flat.”

Kelsall believes the current focus on performance is an outcome of the transition as opposed to its cause. “The major transition which is occurring in education is greater demand, greater access and choice, and thus greater competition for students. Further, the expansion and continued growth of online education has provided students with even greater access and choices, as well as additional delivery mechanisms for schools to reach new markets.”

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### **U.S. Spellings Commission findings on target or off base?**

The recent Spellings Commission report addresses the quality of U.S. higher education and talks of the need for improved access, affordability, and accountability. While most agree that many of the issues outlined in the report need to be addressed, the devil can be in the details.

With all due respect to those conversations currently taking place behind America's ivy-covered walls, Lombardi says discussion about affordability, accessibility and accountability has been taking place for decades. Most would agree that U.S. higher education is generally doing a better job of preparing students than U.S. K-12, but could it do more? Sure, says Lombardi, but cautions that institutions will be more likely to pay attention to what their customers do rather than say. "Legislators, for example, say they want cheap, affordable, high quality education available to all. They support cheap education that is of generic quality and is affordable to many. They send their children, however, to the most expensive, selective institutions they can find. It's important to track what the customers actually do, rather than focus on what they say."

The real issue with the Spellings findings, says Read, is how does one really judge quality? Over what period of time? In the judgment of which stakeholders? Although the report specifically questions U.S. higher education, the issues are relevant to academia worldwide.

Lendo believes the commission's findings will have little impact on higher education until some of the underlying accountability issues are addressed. The notion of tenure and guaranteed lifetime employment is one of the items he puts at the top of the list. He noted there has been insufficient

debate about considering multi-year contracts in lieu of tenure. An all-out effort regarding ineffectiveness and inefficiency in American public school systems is needed, he says, because fewer students are prepared for college and work. Studies indicate students from other developed countries are outperforming their U.S. counterparts in many subjects.

Allen considers the findings a profound statement of expectations about opportunity, but also a challenge. The values the report espouses can only be achieved, he says, by leveraging the use of technology and good process re-engineering principles of both academic and administrative systems in America's colleges and universities.



**Nick Allen**

"Technology has given us an opportunity as never before to accomplish all of these values concurrently," says Allen. "In previous times, they were at tension with one another. It was assumed that to have

quality, one had to limit access, that quality had to cost more and thus be unaffordable to most individuals, and that higher education institutions were really only accountable to themselves. All that has changed thanks to technology. Technology will enable a revolution in access to a quality higher education for large numbers of people that will surpass what was experienced in the U.S. when the GI Bill was introduced following World War II."

### A quality educational experience

The Spellings Commission report, along with work being conducted by organizations such as the Council for Higher Education Accreditation (CHEA) and the National Association of State Universities and Land-Grant Colleges (NASULGC) in the U.S., and the Quality Assurance Agency for Higher Education (QAA) in the U.K., highlight the struggle to define a quality educational experience. What components make for a quality education? Most agree the answer to that question is complex.

Luskin believes a key component is learning how to learn; the ability to write and speak clearly and to think critically and creatively. Another component, adds Dan Devine, CEO of Compass Knowledge Group, is to be able to complete one's formal education with a marketable skill that will allow one to adapt to the needs of the marketplace. Says Lendo: "Students must be prepared to live and work in a 'flat,' 21st century environment rooted in global competition and complex, strategic partnerships."

Read cites as an important component is excellent teachers who are knowledgeable, enthusiastic and, when relevant,

able to relate their research activities to their teaching. Other important components, he says, include: a stimulating cohort of students; a balance of passive (reading and lectures) and active (projects, production, performance) learning; good facilities and resources; and awareness and confirmation of the knowledge and skills being acquired.

"On what level does one define 'educational experience?'" asks Allen. "Does it include the menu of services an institution wraps around its courses and programs to support a student's progress and needs? Is it a student's experience in a particular class from her interaction with faculty, classmates, course materials, and learning objects? Is it the student's measured growth in knowledge, skills, and abilities between the beginning and end of that experience? Is it a student's measured growth over a program of courses? I would argue that a quality educational experience includes all of these, as defined in some set of agreed upon metrics, however imperfect."



**Bernie Luskin**

Technology can serve as a powerful enabler of the learning experience, particularly for the new majority of students: the older, working adult student with working and family obligations as well as a non-traditional schedule and

outlook. Says Read: “By supporting the learning process and flexible learning, technology allows students freedom from the tyranny of time and geography.”

Lombardi defines learning technology as simply the implementation tools for the work that higher education wants to accomplish. “Technology is always expensive, and its value is hard to predict. People should sell their stuff, see if it gets used, and watch markets emerge. Whoever figures out how to make YouTube, iPod, and Facebook useable technologies will win the war. Short term, however, there’s lot of money to be made in specialized niche products that give gee-whiz value to standard educational products.”

Learning technology can enhance not only the access to content, but also the interaction that takes place between students and faculty, and improve assessment through the use of data, reporting analytics and assessment portfolios, says Kelsall. “With the right information, faculty and other stakeholders can use this data to enhance the learning experience in a more systematic fashion than is possible if relying purely on in-classroom information. Educational technology is a tool; the effectiveness in the use of this tool requires training and experience.”

Kuttler notes that as an increasing percentage of students opt to complete their educational programs online, it is incumbent on educators to “use the new technology tools effectively to promote student-to-faculty and student-to-student communication, to work collaboratively, and to engage in higher order skill development in areas like critical thinking.”

## Defining learning outcomes

Learning outcomes are, quite simply, what we want our students to take away from a particular unit of study, whether a module, a course, or a program. They are a defined set of learning objectives associated with an educational activity, the criteria to measure the success or failure of those objectives, and an assessment mechanism to measure the mastery of those objectives.

Learning outcomes can also be defined as a buzzword that means whatever the individual using it wants it to mean. For one group, it may mean an employable graduate. For another, it might mean someone who can go to grad school. And for yet another, it might define the ability to read and write and count. Outcomes are a function of purpose, and to focus on outcomes without understanding purpose is to create expectations that nurture government bureaucracy and promote an environment where some partially succeed, all partially fail, and the elite are the primary beneficiaries. So the question really becomes: learning outcomes for whom? And for what? It is not a “one size fits all” solution.

Clark points out that improving the clarity of expression of the learning outcome and making the teacher more capable of articulating the outcomes that s/he is expecting can improve both the student understanding of what is expected and sharpen the focus on the learning activities that lead to the achievement of the outcome. To what degree do institutions, programs, and individual faculty “connect the dots” between the goals of the educational experience at all three levels?

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Allen points out that at an institutional or programmatic level, learning outcomes need to be established for what we want our students to have acquired by the time they leave with a degree or certificate. At the baccalaureate level, he says, learning outcomes seem to fall into six to ten broad areas (at least for those institutions that focus on outcomes): communication skills (written and oral); quantitative fluency; critical thinking; information literacy; technology fluency; scientific fluency; historical perspective; global perspective or cultural awareness; citizenship; and, of course, specific disciplinary knowledge. These outcome areas are the ones often advocated by regional accrediting agencies as well as some state regulatory commissions. Clark believes that high “value-added” in the academic experience is some measure of achieved outcomes related to initial educational “qualifications”. This includes: independence of thought, ability to work in conditions of uncertainty, critical and analytical capabilities, ability to work productively in collaborative or independent mode, and possession of ICT skills and information literacy skills to permit life-long learning.



Jolene Koester

With the great majority of its institutions autonomous and government funded, Read says universities in the United Kingdom see their primary objective as increasing knowledge and diffusing it throughout society. “They all would like to provide higher quality courses and better educated graduates. Unfortunately, they are under twin constraints of having

to enlarge their student intake on relatively fixed budgets, while having to maintain quality. That they have been managing to do this, more or less, is an indication that they have improved learning outcomes. However, there is a dilemma between tightening up efficiency and flexibility and maintaining the ability to take advantage of new technologies. There needs to be some freedom and willingness to innovate and take risks in the systems for HEI’s to be able to develop and try out new technologies and co-develop enhanced practices and processes.”

The old adage defines insanity as expecting different outcomes from the same processes. In like fashion, without clear measures and defined purposes, higher education cannot expect significant improvement in learning outcomes. Vague generalizations are one of the most effective tools in the academic kit for avoiding change.

Jolene Koester, president of California State University, Northridge, believes improvement will occur with specificity, through measurement or assessment, and in the public dissemination of those results. She also believes providing faculty with incentives can bring about positive change.

“Tuition-dependent institutions must evolve to more business-like models to maximize limited resources in increasingly competitive environments driven by powerful, for-profit entities,” says Lendo.

Devine says technology has enabled institutions to more effectively communicate with students, monitor their progress through the learning process, and open the door for increased collaboration between students and faculty for research. “Not only has it improved learning, but it also has opened up the marketplace. Non-traditional students who couldn’t afford to quit their jobs, abandon their families and move to another city to attend college can now

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improve their lives and engage in life-long learning.”

“We have to change the business model for

higher education, especially in the public sector,” adds Allen. “This is particularly true in the outcomes assessment area. Learning assessment in higher education is like a cottage industry. Every faculty member does it differently, according to their own judgment, interests, and personal experience. At least on a programmatic or institutional basis, we need to move to systemic, scalable approaches. We need to take advantage of the learning technology available to us now.”

### **The tradeoff between access, affordability, and quality**

Does a high quality traditional college education cost more? In a word, yes. The reasons vary.

“Access is a function of who pays for the quality you want,” says Lombardi. “Is it necessary for an education to cost \$40K per student? No. But is it necessary that it cost \$10K per student? And if the student is poorly prepared, wants to study chemistry, or is interested in being where there is a high quality non-academic extracurricular life, then the cost will go

well beyond \$10K. There is a difference between quality and utility. A \$90K Mercedes is better than a \$20K Ford. But is it better for getting groceries? The issue of quality is a matter of cost. The issue of utility is a matter of cost. But they do not cost the same. We reach diminishing returns on the investment in utility well before reaching the diminishing returns on the investment in quality.”

Depending on how one defines quality, it can be improved at a reduced cost through the use of technology. While technology has been used to improve the administration of the learning process, there is less evidence that its use to improve the delivery of learning has significantly increased. And while technology may enable the delivery of some forms of utility at lower cost than traditional education, institutions will need to employ high cost technology in order to achieve a higher quality educational product.

In describing the challenge, Allen also shares an analogy from the automobile industry: The difference between delivering a high quality, machine tooled, custom-made automobile to the few who can afford one, as opposed to the basic, but still high-quality vehicle that’s reasonably customizable to a mass audience. It’s the concept of mass customization that is only made possible through the use of technology.

“What I am saying is that the education industry has the opportunity to do the same as the automobile and other industries if we can give up the paradigm that a college education is only possible if one goes to an ivy-covered school in a little New England village for four years out of high school, and that’s it,” he says. “It was a great experience then, and still is, but only for the select few who get the opportunity. Twenty-first century society needs much more.”

Kelsall says one of the often undervalued benefits of technology is the improved faculty and student efficiency that is obtained through its use. This improved efficiency, while difficult to quantify, can be substantial, and can result in an improved return on investment. Kuttler concurs, pointing to activities like the creation of media-rich RLOs (reusable learning objects) through projects like Merlot, which can enrich both interactivity and the understanding of complex concepts.

### Roadblocks to progress

So what's standing in the way of more improved methods of teaching and learning? Resistance to change on the part of faculty and administrators? The cost of investing in development learning objectives and technology tools to improve learning outcomes? Fear of business process redesign in a risk adverse environment? Perhaps all of the above.

A primary obstacle to progress, says Allen, is belief in the outdated higher education paradigm that learning will naturally take place when the brightest students are put in a classroom with the best faculty, surrounded by ample resources. It's an approach that may work in some cases, he adds, but won't meet all the needs of the present century.

"The other problem for investing in learning outcomes is that it is complex and expensive to do," says Allen. "There are no silver bullets, no one size fits all, and there are costs. Institutions that are trying to do it are just now finding out how difficult it is. The culture shift necessary to do it in most higher education institutions alone is enormous. It requires getting traditional faculty to let go of cottage industry assessment practices to move to systems in which others may be involved in assessing how effective they have been as teachers. That

hits raw emotions and causes much of the resistance."

Read adds that it may be more effective to use technology to remove, as much as possible, the administrative burden from teachers and allow them to do what they do best, which is help students overcome mental blocks, understand what they are learning, and become comfortable with the language and practices of the discipline or profession. These characteristics, he says, are what students value and Internet communications technology is generally not capable of providing.

### The role of technology as change agent

There is no question that technology is having a profound change on teaching and learning. What is the impact and what are its long-range implications?

**The confluence of technology, including access to information and the use of technology to reach new markets, is forcing traditional higher education to address student needs.**

Media is more than a stimulant for social change, says Luskin. Media is social change. It is transformational in that it changes the method by which learning takes place.

"The confluence of technology, including access to information and the use of technology to reach new markets, is forcing traditional higher education to address student needs," says Kelsall. "Further, the public fiscal crisis is resulting in scrutiny and justification of public investment in education. The confluence of these events: Technology, improved access to information, seeking new markets, increased competition and the demand for public justification of education investment are all impacting higher education transition."

Read says increasing globalization and growing competition from China and India are forcing the United Kingdom to strengthen its knowledge base through continued research and the development of creative and high-tech industries. The labor market is also demanding change as a result of the increased outsourcing of manufacturing and services.

Technology has become a true enabler of performance monitoring, says Devine. Contrary to the fear that the increasing use of technology will make learning impersonal, the opposite has occurred. Its application has allowed learning to become more individualized, whether in

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the classroom or through distance learning. It has largely removed the concept of higher education as place and has made learning a 24x7 and lifelong process.

Are these changes in higher education making the transition to a new learning model more imminent or radical than in the past?

Absolutely, says Allen. "This transition is being brought about by raising expectations of the public at large, their hope for a better future through an education, a belief that cuts across economic, ethnic, and cultural differences. Add a global economy that drives the off-shoring of jobs in a 'flat world,' and a new view of learning that sees it as something that takes place over a lifetime rather than in a short period of adulthood. All these factors together have resulted in a need, a demand for education that is unequalled and unfulfilled. Fortunately, the explosion of information and communication technology (ICT) over the past decade changes

the equation for scale, cost of delivery, and access to higher education. It provides us an opportunity to meet the need for higher education as never before, if we are clever enough to figure it out quickly."

### Investing in technology

Is investment in educational technology justified? Yes, provided it supports the improvement of student learning outcomes and is not implemented for its own sake. So, to evaluate and recognize the academic return on technology, baseline learning outcomes (non-technology enabled) should be identified and compared against student learning outcomes derived through technology-enabled delivery. If so, this suggests the determination of the value of educational technology is linked to the establishment of clear learning objectives and expected outcomes. Technology should enable scale and eventually lower the per-unit cost of education. It also can improve access, help students learn better, and help faculty and institutions assess their effectiveness.

"Technology is only helpful if we know what we want to do," says Lombardi. "The role of technology is to help people figure out better ways of doing what it is they want to do. But if they don't know what they want to do, or if the technology just adds cost and no efficiencies or improvements, it will be gee-whiz value, but not real or lasting value."

"The appropriate use of technology can increase revenue by accessing new markets, improving efficiency and effectiveness of educational resources, and gather and analyze data," adds Kelsall. "This data can be used to reduce the cost of regulatory compliance. Increased revenue while improving operating efficiency results in improved education economics."

Further, data gathered through technology can be analyzed to determine behaviors that improve learning outcomes.”

Investment in technology can come from a variety of sources; government funding; endowments; higher tuition and fees based on the belief that the technology produces higher utility or quality; and new savings from the technology itself, which is rare. Some institutions have succeeded in reallocating savings from back-end technology services realized through efficiency. As the cost of hardware, software and some administrative services comes down, those savings can be re-invested in learning technology.

“Educational institutions have to do a better job of carving out and protecting funding in their annual budgets that will be used solely for strategic investments in learning,” adds Allen. “Private industry does this, of course, and it’s usually called R&D. Whether the college or university is public or private, strategic investment money needs to be taken off the top of the institution’s budget at the beginning and before budgets are given to schools and departments to develop. Institutions have the ability, if they have the will, to do some investment of their own. That’s a function of leadership.

It also appears to be a function of mission focus. Clark says that at the Open University it is a given that the institution must allocate for investment in technology to support its distance delivery approach. Open U has chosen to, in essence, pool resources by investing in open source software. Clark adds, “The investment into ICT

for a distance education outfit is a must, but it has to be used within a framework of pedagogic analysis that guides its use and shapes the expected learning outcomes.”

An additional source of revenue for investing in technology is the development of partnering relationships between academic institutions and private industry. Care must be taken, however, in selecting strategic partners; the cultures of industry and academia are so different that “pooling” efforts, says Lendo, can become counter-productive.

“Vendors sell generic applications while universities and colleges want specific applications that help them differentiate their products,” adds Lombardi. “Vendors often sell products that require high costs to implement, and institutions, while buying these products, do not believe the vendors care about the users. Vendors are interested in extracting high margins from very low-margin university and college businesses. This lack of convergence in business models makes for poor relationships.”

“There has to be a willingness for both to work together on projects that will facilitate the provision of educational services, the delivery of curriculum and student learning,” says Allen. “I think more attention needs to be given to the student life cycle and the particular needs of the student in each phase of that cycle that could be facilitated through the use of new technology. The technology industry can’t do this in isolation from educational institutions. It has to be a true partnership.”



# Join the IMS Global Learning Consortium Community



The IMS Global Learning Consortium Community is open and free to everyone interested in learning technology. The Community offers:

- Articles – Discussions and interviews with learning technology industry leaders that showcase important developments of products, services, and trends within the learning community inside IMS GLC and beyond.
- Best Practices – Reports and research conducted to help inform readers about the use of technology to support teaching and learning. These reports look at trends in how technology is being used and supported, as well as the technologies themselves.
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